SHURE®

LEGENDARY
PERFORMANCE™

DDS 5900

User Manual

DDS 5900 Digital Discussion System

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2 Important

2.1 Important Safeguards

1. **Read these instructions** - All the safety and operating instructions should be read before the apparatus or system is operated.
2. **Keep these instructions** - The important safety instructions and operating instructions should be retained for future reference.
3. **Follow all warnings** - All warnings on the apparatus and in the operating instructions should be adhered to.
4. **Follow all instructions** - All instructions for installation or use/operating should be followed.
5. **Do not use this apparatus near water** - Do not use this apparatus in a water or moistures environment - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.
6. **Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and no objects filled with liquids, such as vases, should be placed on this apparatus.**
7. **Clean only with dry cloth** - Unplug the apparatus from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.
8. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions** - Openings in the enclosure, if any, are provided for ventilation and to ensure reliable operation of the apparatus and to protect it from overheating. These openings must not be blocked or covered. This apparatus should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9. **Do not install near any heat sources such as radiators, heat registers, stoves, air ducts, or other apparatus (including amplifiers) that produce heat.**
10. **Do not install the unit in a place exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock** .
11. **To avoid moisture condensations do not install the unit where the temperature may rise rapidly.**
12. **Do not defeat the safety purpose of the polarized or ground-type plug.** A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
13. **Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where they exit from the apparatus.**
14. **Only use attachments/accessories specified by the manufacturer** . Any mounting of the apparatus should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
15. **Use only with the cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus.**

When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over - Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

16. **Unplug this apparatus during lighting storms or when unused for long periods of time** . – Not applicable when special functions are to be maintained, such as evacuation systems.
17. **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped**.
18. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or having the same characteristics as the original part.

    Unauthorized substitutions may result in fire, electric shock or other hazards.
19. **Safety Check** - Upon completion of any service or repairs to this apparatus, ask the service technician to perform safety checks to determine that the apparatus is in proper operating condition.
20. **Overloading** - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
21. **Power Sources** - This apparatus should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For apparatuses intended to operate from battery power, or other sources, refer to the operating instructions.

22. **Power Lines** - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

23. **Object and Liquid Entry** - Never push objects of any kind into this apparatus through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.

Never spill liquid of any kind on the apparatus. Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.

2.1.1 **Labels**

"Lightning Flash Symbol" with the lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.

"Exclamation Point Symbol" with the exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

2.1.2 **Note for Power Connections**

Check that the voltage of your local power supply is within the operating voltage of the unit. If a voltage conversion is required, consult your DIS dealer or qualified personnel.

Set the Power switch to 'Off' if it is not used for several days.

Important: The equipment must be connected to earth (ground)

The wires in the main lead supplied with the equipment are colored in accordance with the following codes:

- Green-and-yellow Earth (Ground)
- Blue Neutral
- Brown Live
- The green-and-yellow wire must be connected to the terminal in the plug marked with the letter E or with the safety earth symbol or marked with green-and-yellow color.
- The blue wire must be connected to the terminal marked with the letter N or marked with black color.
- The brown wire must be connected to the terminal marked with the letter L or marked with red color.
- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

2.1.3 **Power Disconnect**

Apparatuses with or without On/Off switches have power supplied to the apparatus whenever the power cord is inserted into the power source; however, the apparatus is operational only when the On/Off switch is in the On position. The power cord is the main power disconnect for all apparatuses.

2.2 **Compliancy**

The equipment has been tested and found to comply with the limits of the following standards for digital devices:

- EN55103-1 (Emission)
- EN55103-2 (Immunity)
- EN60065 safety
- UL6500 safety

The device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) The device may not cause harmful interference, and (2) the device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in residential, commercial or light industrial environments. The equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the user manual it may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Intentional or unintentional changes or modifications

not expressly approved by the party responsible for compliance shall not be made. Any such changes or modifications could void the user's authority to operate the equipment.

If necessary, the user should consult a dealer or an experienced radio/ television technician for corrective action.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2.3 Cleaning

To keep the cabinet in original condition, periodically wipe it down with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use organic solvents such as thinners or abrasive cleaners since these will damage the cabinet.

2.4 Repacking

Save the original shipping box and packing material; they may be used to ship the unit. For maximum protection, re-pack the unit as originally packed from the factory.

2.5 Warranty

The units are covered by a 24 month warranty against

defects in materials or workmanship.

3 DDS 5900 Digital Discussion System

The DDS 5900 Digital Discussion System is a conferencing solution with plug-and-play setup and online discussion management. With excellent audio quality and programmable touch-button controls, compact microphone units facilitates clear communication in large groups and meeting spaces. The system manages up to eight talkers at a time and dedicates two channels for interpretation, supporting bilingual events without additional equipment.

The DDS 5900 Digital Discussion System is comprised of one central unit, the control browser, and up to 250 discussion units. Supporting multiple user types, a gooseneck microphone, loudspeaker, and control buttons are combined in a compact discussion unit. With highly flexible layout options and a choice of tabletop or flushmount units, the system seamlessly integration into a wide range of professional environments, such as:

- Corporate meeting rooms
- City councils and regional government bodies
- Educational institutions
- Courtrooms
- Non-profit organizations
- Videoconferencing

3.1 Features

Clear, Natural Communication

DDS 5900 discussion units enhance group communication, allowing natural conversing volumes to be heard in large meeting spaces. Gooseneck microphones provide excellent speech isolation, while the LED light ring indicates who is talking. A 24-bit digital audio signal is transported to each discussion unit for real-time monitoring from the loudspeaker. Several microphone operation modes provide manual and automatic ways of controlling who speaks.

Sleek, Professional Design

Modern, low-profile design integrates into a variety of spaces, from historic buildings to contemporary boardrooms. DDS 5900 discussion units are intuitive and functional, reducing clutter and increasing tabletop workspace. Two model variations are available to support the needs of any event:

- Compact flushmount unit for permanent installation
- Portable unit for quick setup and easy tear-down

Flexible Setup and Easy Installation

The DDS 5900 system uses a proprietary protocol to transport digital audio, control data, and power over a single cable. Up to 250 units can connect in serial with a Cat5e cable, easily scaling to support the event. To add participants to the discussion, simply connect additional units to anywhere in the chain.

Remote Management

For comprehensive system management, open the system control interface using a web browser. The interface adds system configuration and discussion setup capabilities, enabling an administrator to prepare the discussion with participant names and seat numbers. The chairman or moderator uses a dedicated page for speaker management during the discussion. The browser interface operates on any computer or tablet connected to the network.

The system is compatible with Crestron, AMX, and other programmable controllers. The CU easily interconnects with teleconferencing equipment and digital signal processors.

3.2 System Concepts

The DDS 5900 Discussion system is an important communication tool for a large group of people and meetings in large spaces. Participants use the discussion unit microphone and loudspeaker to discuss using natural speech levels.

3.2.1 The Discussion Unit: A Personal Sound System

The DDS 5900 Discussion Systems improves communication amongst a group of people by combining the microphone, loudspeaker, interpretation audio, and user controls in an integrated unit. When a participant speaks, their voice is heard at the other the discussion units' loudspeaker.

Traditional sound systems support the communication of one or two speakers to a crowd of people. In this system, it is impossible to have the dialog required in a discussion setting.

3.2.2 Discussion Participants and Roles

The DDS 5900 discussion unit is programmable to support different functions required by different people involved in the discussion. For example, as the moderator of the discussion, the chairman has an extra control that immediately turns off all delegate microphones. In a typical event, there are three categories of participants:

The following is an overview of each participant role and how they function in a typical discussion.

Delegate (member, participant)

The majority of participants fall into this category. The delegate role is for anyone involved in the discussion that is not a chairman or interpreter. Delegates use the discussion unit to speak and listen to other participants. Depending on the discussion is settings, the delegate need to request to speak before the microphone is activated by the Chair.

- Up to 250 delegates can be connected to a single system.

Chairman (chair, moderator, president)

The chairman, or simply the Chair, is the moderator of the discussion. Typically seated at the head of the meeting space, the Chair has the ultimate authority over who is speaking. Using the browser interface, the moderator has ability to turn microphones on or off for specific participants, and view the order in which participants request to speak. Providing immediate control of the discussion, an 'all-delegate off' button is available on discussion units programmed to chairman mode.

- There is typically only one Chair for each event, though more can be added.

Interpreter (translator)

When an additional language is required, an interpreter uses the discussion unit to translate the discussion. Interpreters select from one of two channels to transmit to other participants speaking the same language. This system supports bilingual, two-way discussion, facilitating the back-and-forth communication between delegates speaking two different languages.

- Up to 32 interpreters stations are supported in a single system.

4 Component Overview

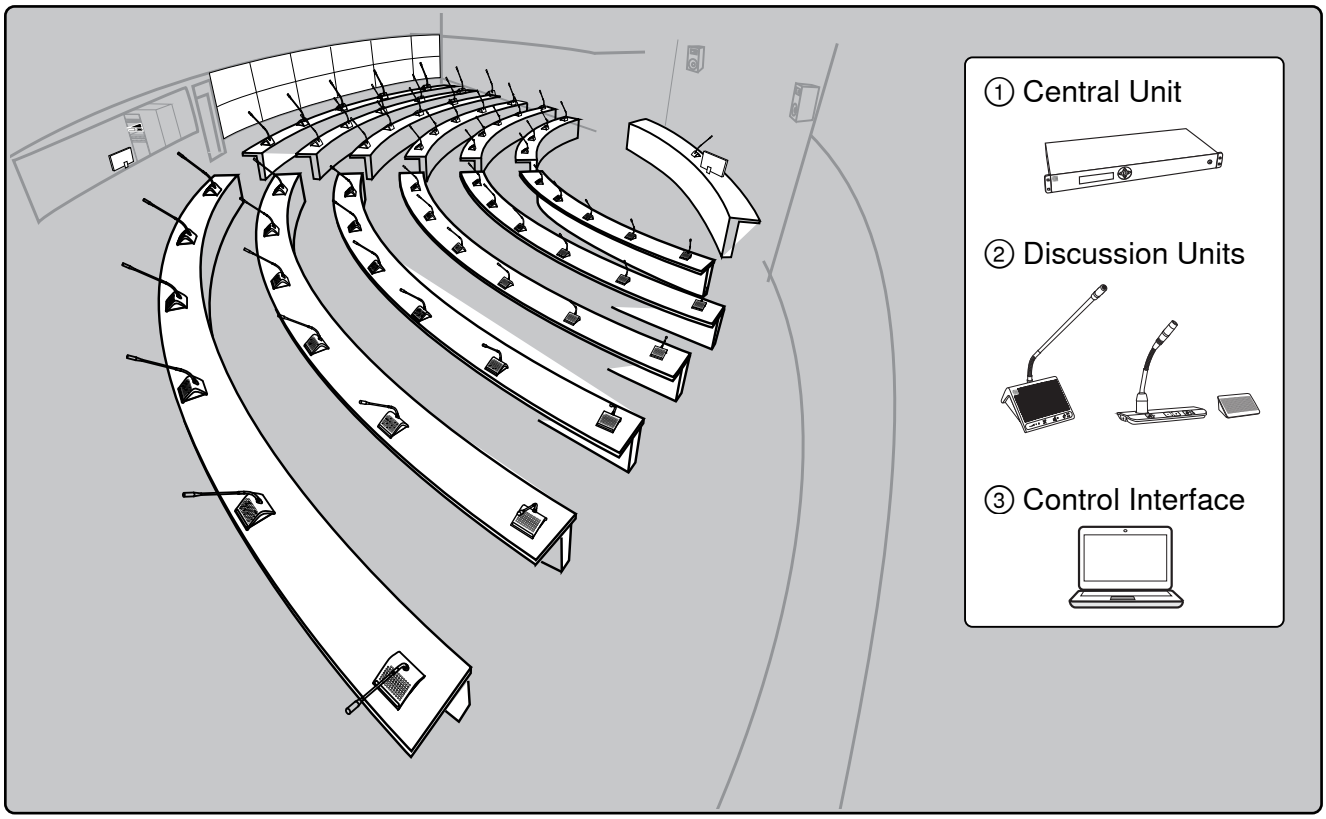


Figure 1. DDS 5900

The DDS 5900 Discussion System consists of the following components:

① CU 5905 Central Unit

The central unit (CU) is the processor for the DDS 5900 system. It provides power and control to the discussion units, analog audio inputs and outputs for external equipment, and a webserver that hosts the browser interface for remote system control. Each system uses a single CU.

② Discussion Units

Participants use the discussion units to speak and listen to other members of the event. A microphone, loudspeaker, and channel selector are provided for each unit. Units connect in serial, simplifying setup by transporting power, audio, and control data on the same cable. Up to 250 units can be connected in any order, regardless of configuration. There are two models of discussion units:

DC 5980 P Portable Discussion Unit

All-in-one unit that sits on the table surface. It is required for supporting language interpretation.

DC 5900 F Flushmount Discussion Unit

The flushmount discussion unit installs unobtrusively into a table or podium. The modular unit adds functionality depending on the components.

③ Browser Interface

The browser interface provides comprehensive setup and discussion management for the DDS 5900 system. It opens in a web browser from a computer networked with as the CU. Use the interface to manage microphones, assign names and seat numbers to delegates, and advanced system configuration

4.1 **Central Unit**

The CU 5905 Central Unit (CU) provides the intelligence for system of up to 250 discussion units. It processes audio and control signals from each discussion and interpreter unit, and distributes audio to other participants for listening to the discussion.

CU 5905 CU has the following features:

- Controls a system of up to 250 discussion units and 32 interpretation units
- Transports secure audio signal with a proprietary codec algorithm
- Supplies power for up to 60 discussion units
- Supports two (2) interpretation channels for bilingual discussions
- Provides four (4) XLR connectors for connection to PA systems, audio mixers, audio recorders, or a language distribution system
- Provides two (2) audio inputs for connecting wireless microphones, processed audio signals, an emergency broadcast message, or music during meeting breaks
- One rack unit (1RU) installs into a standard 19" rack

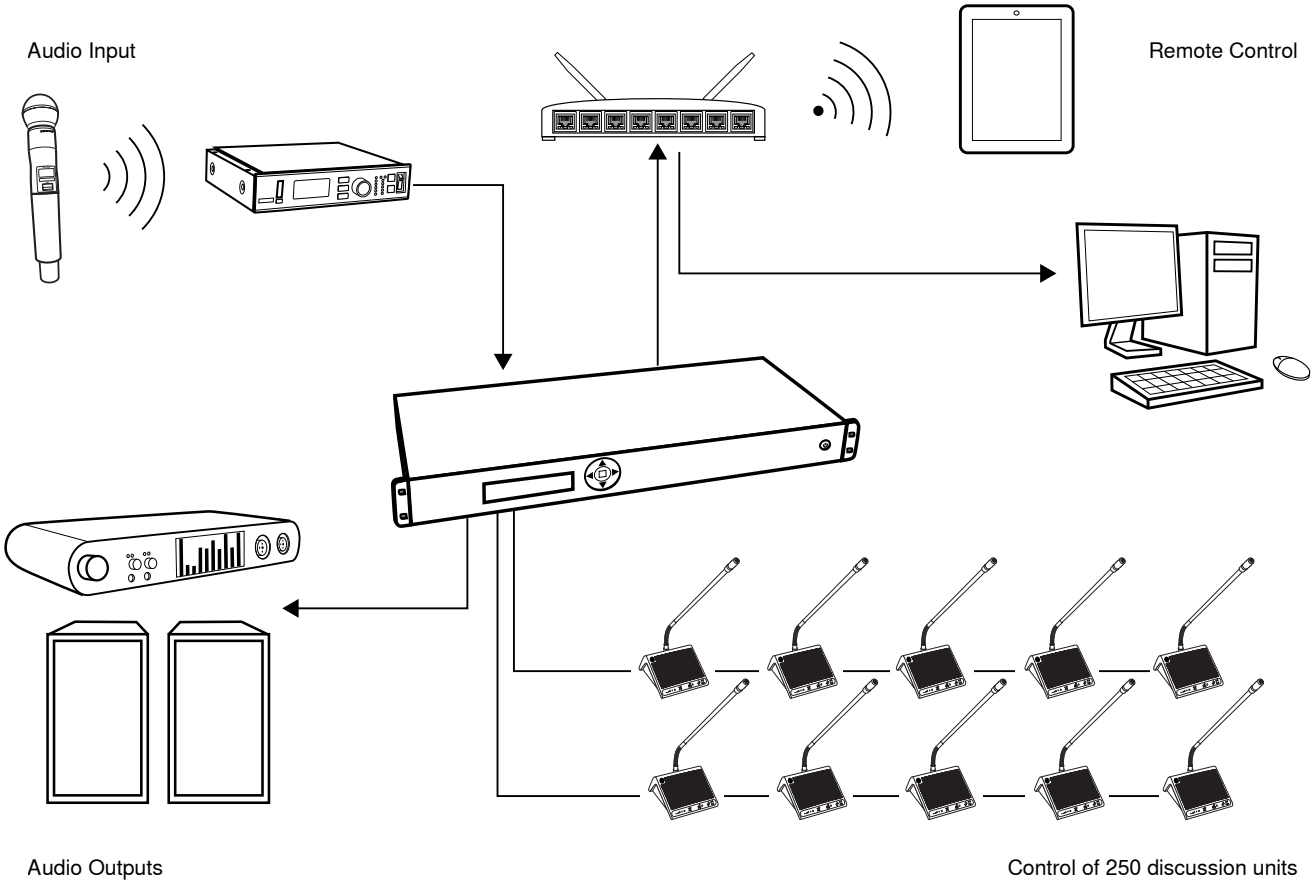


Figure 2. System Hub

The CU connects external equipment to the DDS 5900 system

4.1.1 **CU Interface Description**

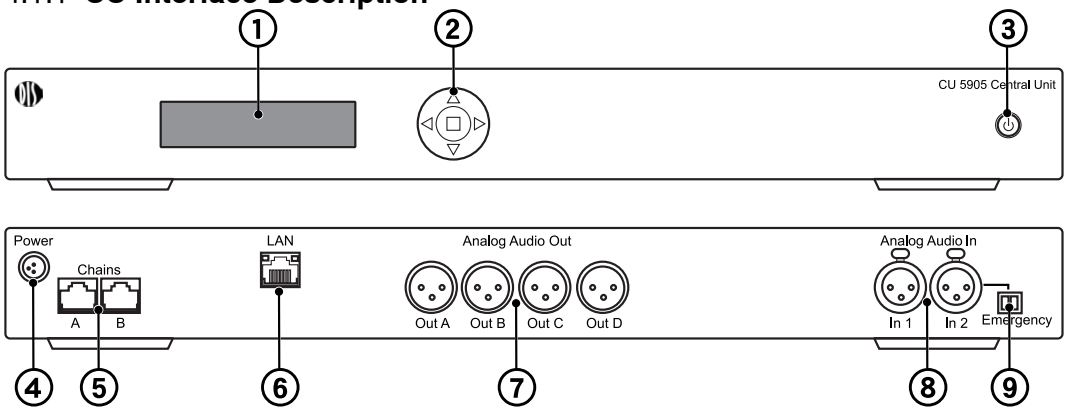


Figure 3. CU 5905 Central Unit

① Menu display
A 2x20 character OLED-display enables system configuration without a computer.

② Navigation Buttons
5-button keypad for configuring the system without a computer.

③ Power Button
The power button turns on or off the central unit. All connected discussion units and power supplies will automatically power on.

- Green = powered on
- Red = powered off but connected to power supply
- Off = no power supply is connected to the unit

④ Power Supply Connector
Threaded connector secures to the PS CU power supply.

⑤ Chain outputs
Two RJ45 jacks are available for connecting the discussion units, forming the DCS-LAN. The DCS-LAN chain safely carries digital audio, control data, and power over the same cable. The CU operates a single mix from the two separate discussion unit chains, enabling more flexible installations and system connections.

Important: Only connect DDS 5900 discussion units to this output.

⑥ Control Connector (TCP/IP)
The RJ45 connector allows access the built-in web application from a computer, or for connection to a control system like AMX® or Crestron®.

⑦ Audio Outputs
Four balanced, male XLR connectors for connection to PA systems, audio mixers, audio recorders, or a language distribution system.

⑧ Audio Inputs
Two balanced, female XLR connectors for connecting wireless microphones, processed audio signals, an emergency broadcast message (EEM), or music during meeting breaks.

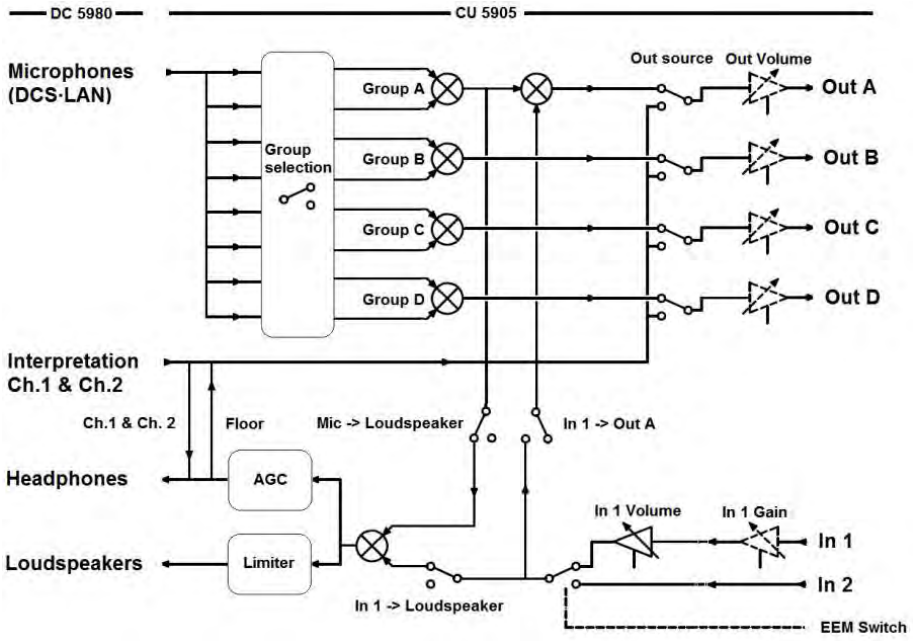
- **Input 1:** Connect an additional audio source; gain is adjustable.
- **Input 2:** Connect an Emergency Evacuation Message (EEM) audio signal.

⑨ Emergency switch connector
A terminal block connector for a 'normally open' switch. When the switch is closed, the audio signal on the 'In 2' connector is distributed to all output channels, overriding all other audio inputs.

Note: There is no volume control available for setting the volume on 'In 2'. The volume has to be set at the equipment generating the "Emergency Evacuation Message (EEM)" audio signal.

4.1.2 **Simplified Audio Schematic**

Figure 4. DDS 5900 Digital Discussion System Audio Schematic



4.1.3 **Menu Navigation**

The CU 5905 provides controls from the front panel for system setup and configuration. Use the 5-button keypad to navigate the menu and change settings.

The figure below gives an overview of the menu structure.

- Use arrow buttons to cycle through menu items
- Press `Enter` button to navigate to an editable field.
- Use up/down buttons to cycle through the available values
- Press `Enter` button to save changes

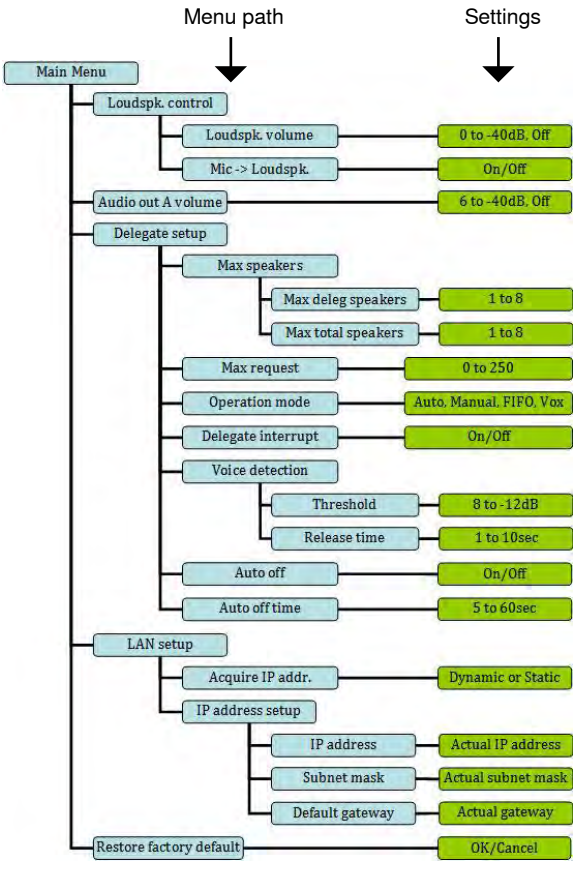


Figure 5. Menu Overview

4.2 **Discussion Units**

Participants use discussion units to communicate with other members of the event. Connected in daisy-chain configuration from the central unit, they transport digital audio, control signals, and power over a single cable. The sleek, professional design and minimal cabling allows seamless integration into professional meeting spaces. A DDS 5900 system supports up to 250 discussion units at the same time.

DDS 5900 Discussion Units

Primary functions of the unit:

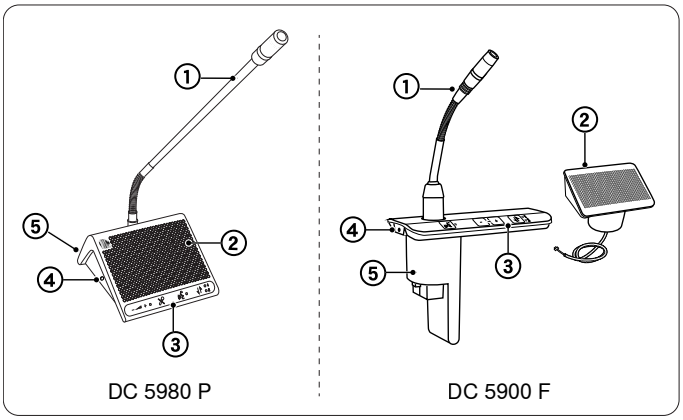
① **Microphone**: for speech

② **Speaker**: for listening to the discussion

③ **Control Buttons**: for microphone operation and translation channel selection

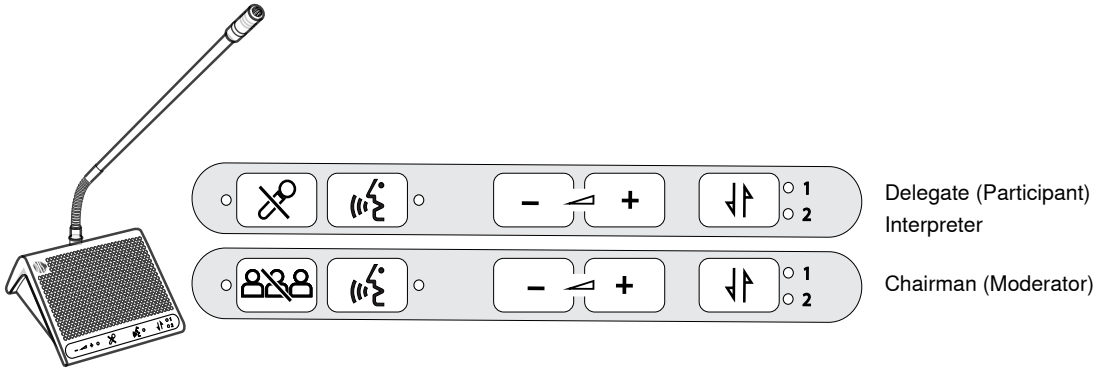
④ **Headphone Jack**: for listening to a translation channel

⑤ **Base with RJ-45 Jacks**: for power, audio, control transport

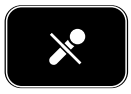


4.2.1 **Control Buttons**

The discussion unit is programmable to support different people involved in the discussion. For example, as the moderator of the discussion, the chairman has an extra control that immediately turns off all delegate microphones.



Using the Controls

Button		Description
Speak		Press to turn on the microphone or add the user to the request list, depending on the system operation mode set in the CU.
Mute (delegate only)		Press and hold to temporarily mute the audio from the microphone. During this time, the delegate will retain speaking privileges but the microphone will not pass audio to the floor sound. The microphone light ring is off during mute.
Delegate Off (chairman only)		The chairman has the ability to immediately turn off all delegate microphones with this button. At that time, only the chairman has speaking privileges.
Channel Selector		Scroll through the channels to select an audio source for monitoring on headphones. Channels 1 and 2 select a language translation feed; floor sound is selected when the LEDs are off. When the unit is programmed for an interpreter, this select the transmitting channel.
Headphone Volume		Increase or decrease the volume of the headphone audio signal.

4.2.2 **Model Variations**

DC 5980 P Portable Discussion Unit

Sits on the tabletop without drilling or cutting the surface, and easily dismantles for system reconfiguration. Features include an integrated speaker, rear-exit cable routing, and operation as an chairman, delegate, or interpreter unit.

Integrated Design

The following features are integrated in the unit

Translation Monitoring

Listen to a translation channel using the headphone output

Sound Reinforcement

Loudspeaker for listening to other talkers

Microphone Variations

Compatible with all DIS microphones

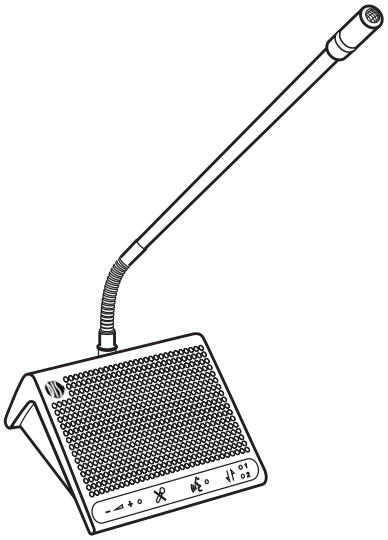


Figure 6. DC 5980P Portable Discussion Unit

DC 5900 F Flush-Mounted Discussion Unit

Installs permanently into a table or podium. A low-profile design conceals the base and cabling below the tabletop surface. This unit can operate as a chairman or delegate.

Modular Design

Functionality is scalable by adding or subtracting parts

Translation Monitoring

Two front plate options are available:

- FP 5981 F: speech with translation monitoring
- FP 5921 F: speech only

Sound Reinforcement

Add the optional LS 5900 F loudspeaker

Microphone Variations

In addition to DIS microphones, a Shure Microflex Gooseneck is compatible with the flushmount unit by connecting the AC 5901 adapter

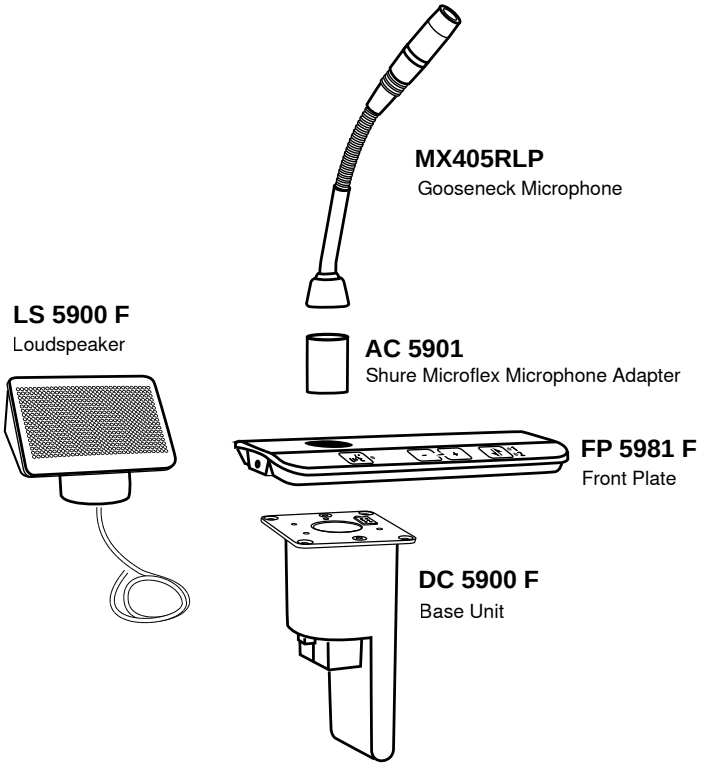


Figure 7. DC 5900 F Discussion Unit

4.2.3 **Gooseneck Microphones**

The DIS GM 592x microphone delivers excellent audio performance with a frequency response specifically tailored for speech. The gooseneck is on the base of the microphone, providing flexible positioning. A red LED ring at the top of the microphone clearly indicates when the microphone is active and the participant is speaking.

Two models are available:

- **GM 5923**: 40 cm (16 in.)
- **GM 5924**: 50 cm (20 in.)

Figure 8. DIS GM 592x

4.2.4 Shure MX 400 Gooseneck

The DC 5900 F Flushmount discussion unit functions with Shure MX 400 RLP series microphones. Featuring legendary Shure audio performance and build quality, CommShield® Technology eliminates noise caused by smart phones, tablets, WiFi and other RFI. A red LED ring at the top of the microphone clearly indicates when the microphone is active and the participant is speaking. A flexible gooseneck is on the top of the microphone.

Three models are available for the DC 5900 F Flushmount Discussion unit:

- **MX 405 RLP**: 15 cm (6 in.)
- **MX 410 RLP**: 25 cm (10 in.)
- **MX 415 RLP**: 38 cm (15 in.)

Microphone Adapter

The AC 5901 microphone adapter enables the flushmount discussion system to use the MX series microphone. Simply screw the adapter to the bottom of the microphone, and insert it into discussion unit.

Figure 9. Shure MX 4xx RLP

4.3 **Additional Compatible Equipment**

The following units are available to use in the DDS 5900 system:

Additional Power and Advanced Setup

EX 6010 Extension Unit

Extension power supply and data refresher provides four chain outputs for 200 discussion units.

RP 6004 Repeater/Splitter

Refreshes data signal for long cable runs and provides four additional outputs for discussion unit chains.

PI 6001 Power Inserter

Provides power for 40 discussion units.

JB 6104 Junction Box

Provides provides four tap-out points for discussion units.

RC 6000 Redundancy Controller

Enables the connection of a redundant CU 5905 central unit to protect against power failures.

Using the Discussion Unit

Headphones

- DH 6021: Stereo on-ear headphones
- DH 6223: Stereo stethoscope headphones
- DH 6225: Mono ear-clip headphone

Microphones

- GM 6523: Gooseneck Microphone 40 cm (16 in.)
- GM 6524: Gooseneck Microphone 50 cm (20 in.)
- GM 6525: Gooseneck Microphone 63 cm (25 in.)
- GM 6622: Shotgun Microphone

Storage Boxes

- SB 5980: Ten pieces of DC 5980 P discussion units and GM 59xx gooseneck microphones

5 Installation

Discussion units operate by connecting in serial from the CU 5905. Power, audio, and data are transported over a single Cat5e cable from one discussion unit to the next. This topology enables flexible and inexpensive installation for large groups of people.

5.1 Rackmounting the CU

Install the CU 5905 Central Unit in a standard 19” rack using the supplied 19” brackets. Remove the screws holding the top and bottom covers, then attach the brackets to the front of the unit using the same screws.

The built-in fan draws air in on the left side and exhausts air on the right, and so does not require extra space above or below for cooling.

5.2 Cable Requirements

Shure offers cables designed specifically for the DDS 5900 system. The Shure EC 6001 are high-quality Ethernet cabling available various lengths from 0.5 m to 100 m. Each cable has been tested to ensure the best system performance. See the accessories section for ordering information on the EC 6001-xx.

Figure 10. EC 6001

Cat5 Cable Requirements

Type	Cat5e (or higher) twisted pair
Shielding	F/UTP or U/FTP
Connector	Shielded RJ45
Weight	AWG 24
Bending Radius	>15mm
Maximum Cable Length	• **CU 5905 only:** 120 m • **CU 5905 with repeater units:** 420 m

5.2.1 Installed Cabling Recommendations

When designing a space with permanent cabling in the floor or walls, terminate the cables to a patch panel. It is more reliable (and easier) to crimp the cable to the female shielded connecter on the panel. Then simply use short jumper cables to connect to the discussion units.

5.3 **Connection Diagrams**

The following system diagrams illustrate typical hardware connections to the CU 5905 Central Unit. Actual installations may use different combinations of hardware, but follow the general concepts outlined below.

Note: Flushmount and portable discussion units are interchangeable in the following drawings.

5.3.1 **Basic Setup with Discussion Units**

The system is fully operational without the use of a computer. Use the CU navigation screen to set up the installation.

Use one or both `ABChain` outputs on the CU to connect the discussion units in series.

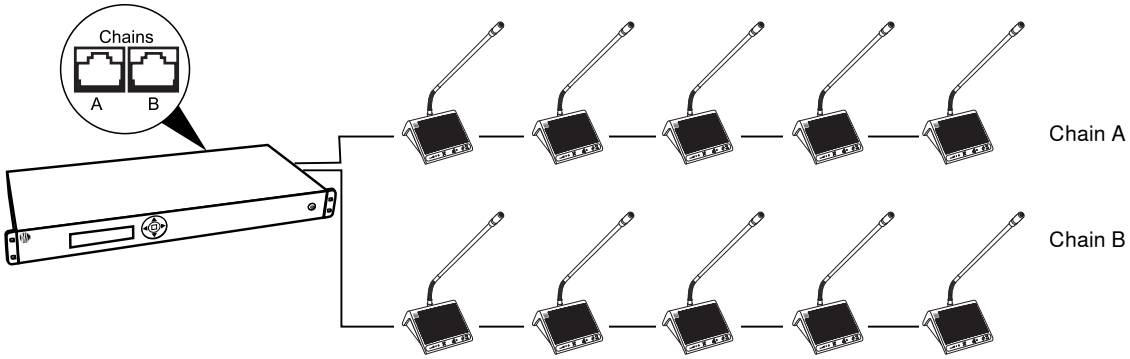


Figure 11. Basic System with Two Chains

5.3.2 **Computer for Advanced Management**

Connect a computer to the central unit for comprehensive management of the system through a web browser. Connect an Ethernet cable from the dedicated `LAN` port to a computer.

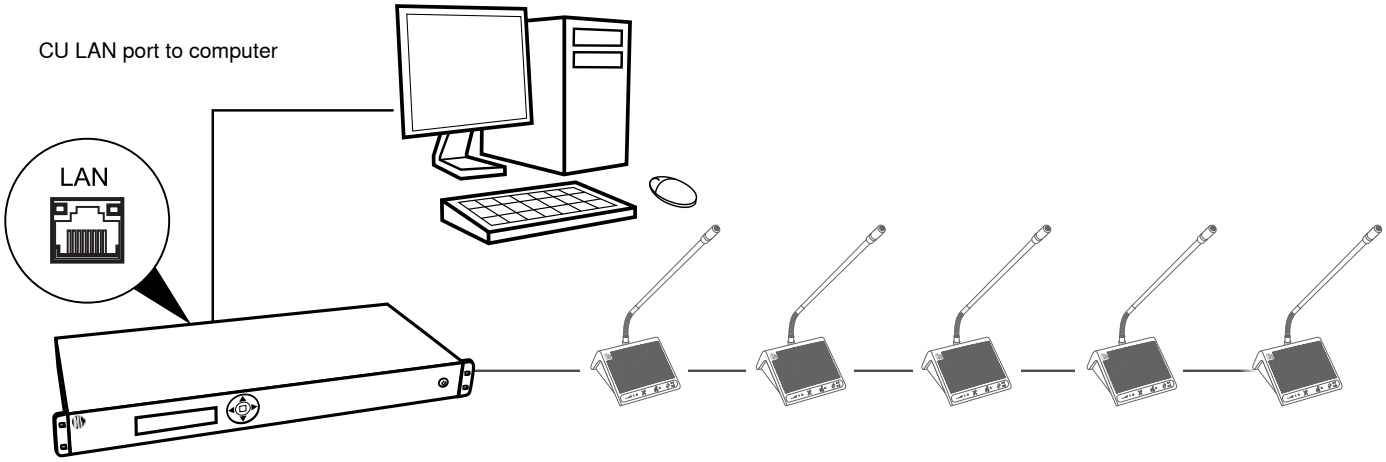


Figure 12. Computer Control

5.3.3 **Tablet or Laptop for Wireless Control**

Use a wireless router to access the web browser from an iPad or tablet. The web browser on the iPad offers the same comprehensive system management.

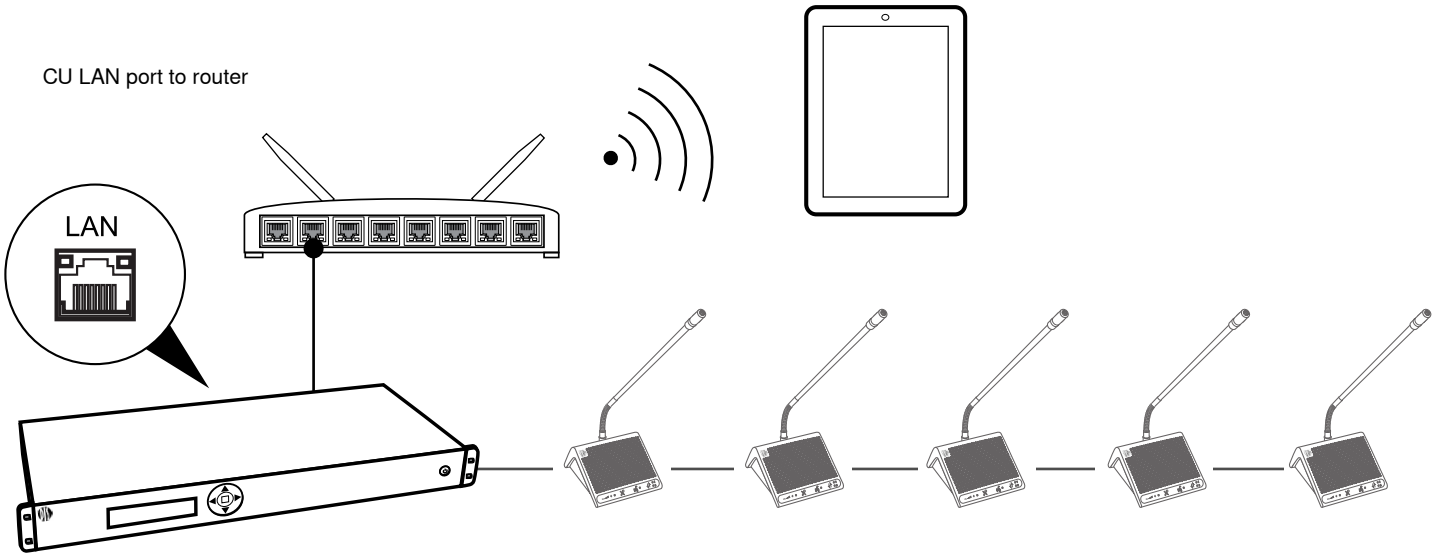


Figure 13. Wireless Control

5.3.4 **Interpretation Units**

The DC 5980 P portable discussion unit can operate as a interpreter unit. Connect the interpreter units to any of the discussion units, anywhere in the DCS-LAN chain. Other participants use the headphone jack to listen to one of the translation channels.

The DDS 5900 Discussion System supports bilingual discussion, routing a translation channel to each discussion unit. Program the DC 5980 P portable discussion unit for interpreters that translated the discussion to the selected channel. Typically, a separate room or booth is dedicated for interpreters for greater sound isolation.

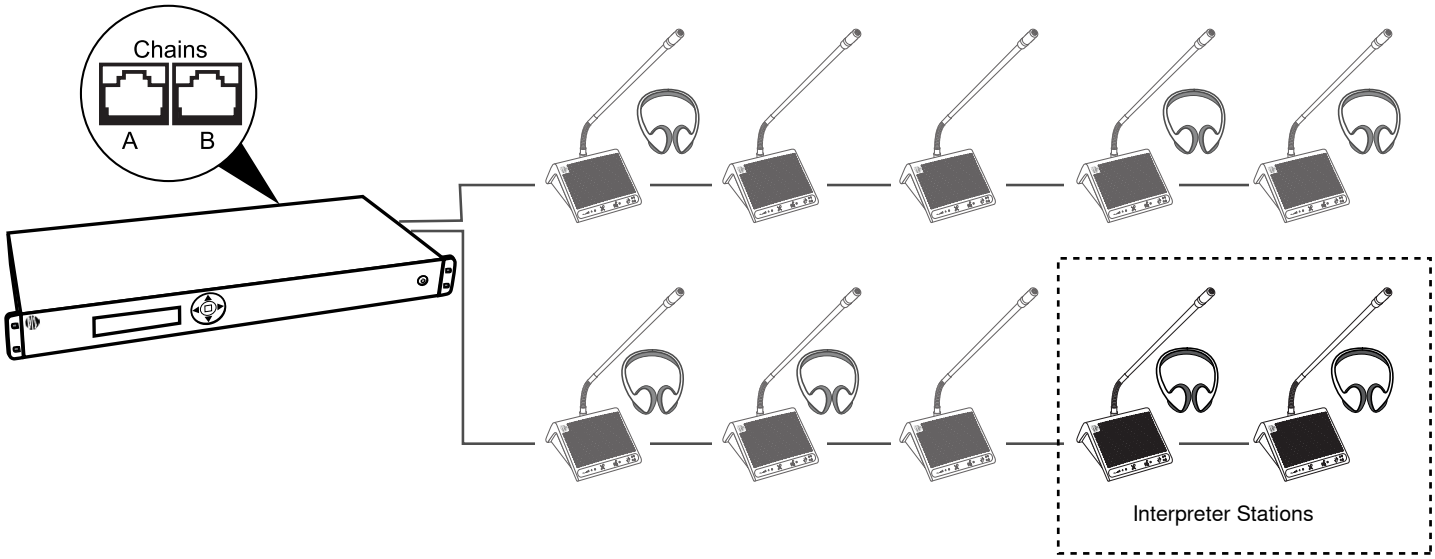


Figure 14. Interpretation Units

5.3.5 **Audio Recorder**

Connect an audio recorder to the analog outputs of the CU to record floor audio, translations, or a specific set of microphones. Use the browser interface to select groups and assign outputs. Connect the XLR outputs of the CU to the inputs of an audio recorder.

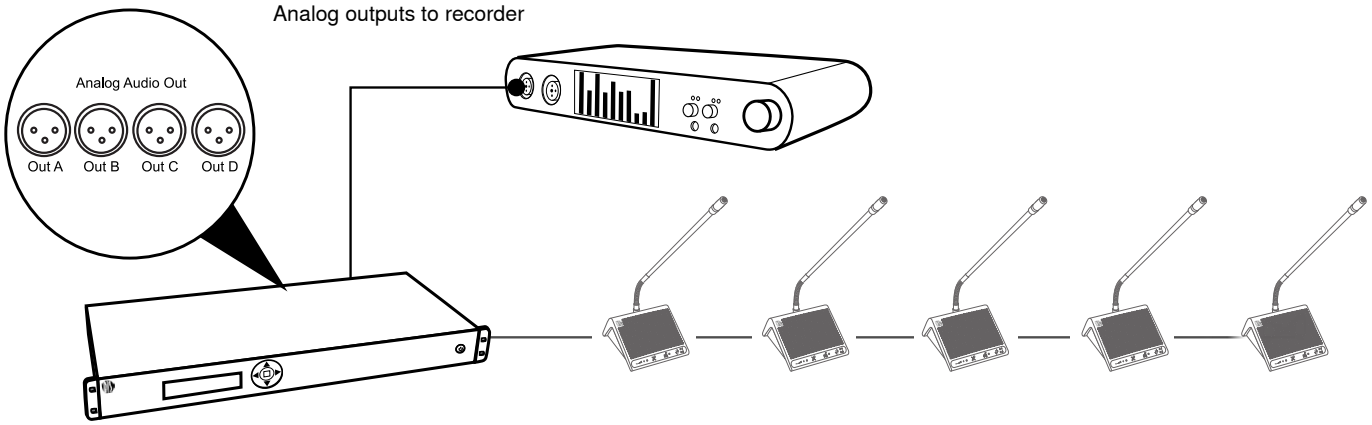


Figure 15. Recording Audio

5.3.6 **Mixer or DSP**

Connect a mixer to control individual microphone volume or equalization. One or more outputs are connected to the external mixer, where the control or equalization is done. Use the browser interface to select groups and assign outputs.

Connect the XLR outputs of the CU to the inputs of the mixer or DSP. Connect the output of the unit to the CU Audio Input 1.

Important: If 'Out A' is also send to the mixer, configure the following settings:

- 'CU 5905 Setup > Audio > Loudspeaker Control > Microphone -> Loudspeaker' set to 'Off'.
- 'In 1 -> Out. A' is set to un-selected in the selection 'CU 5905 Setup Audio > Input/Output Control > Audio In 1'.

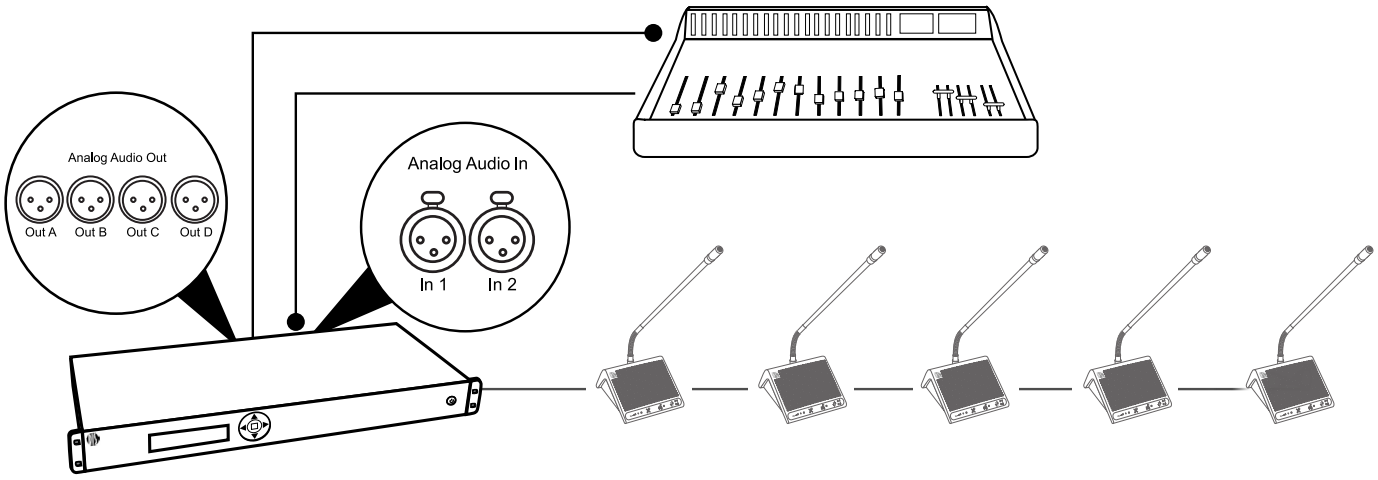


Figure 16. Inserting a Mixer or DSP

5.3.7 **Wireless Language Distribution**

For additional monitoring, connect a wireless language distribution system to the one of the CU audio outputs. Use the browser interface to select to route the desired microphones to that group output. The DCS 6000 Digital Infrared Language System transmits this audio signal to a number of listening stations.

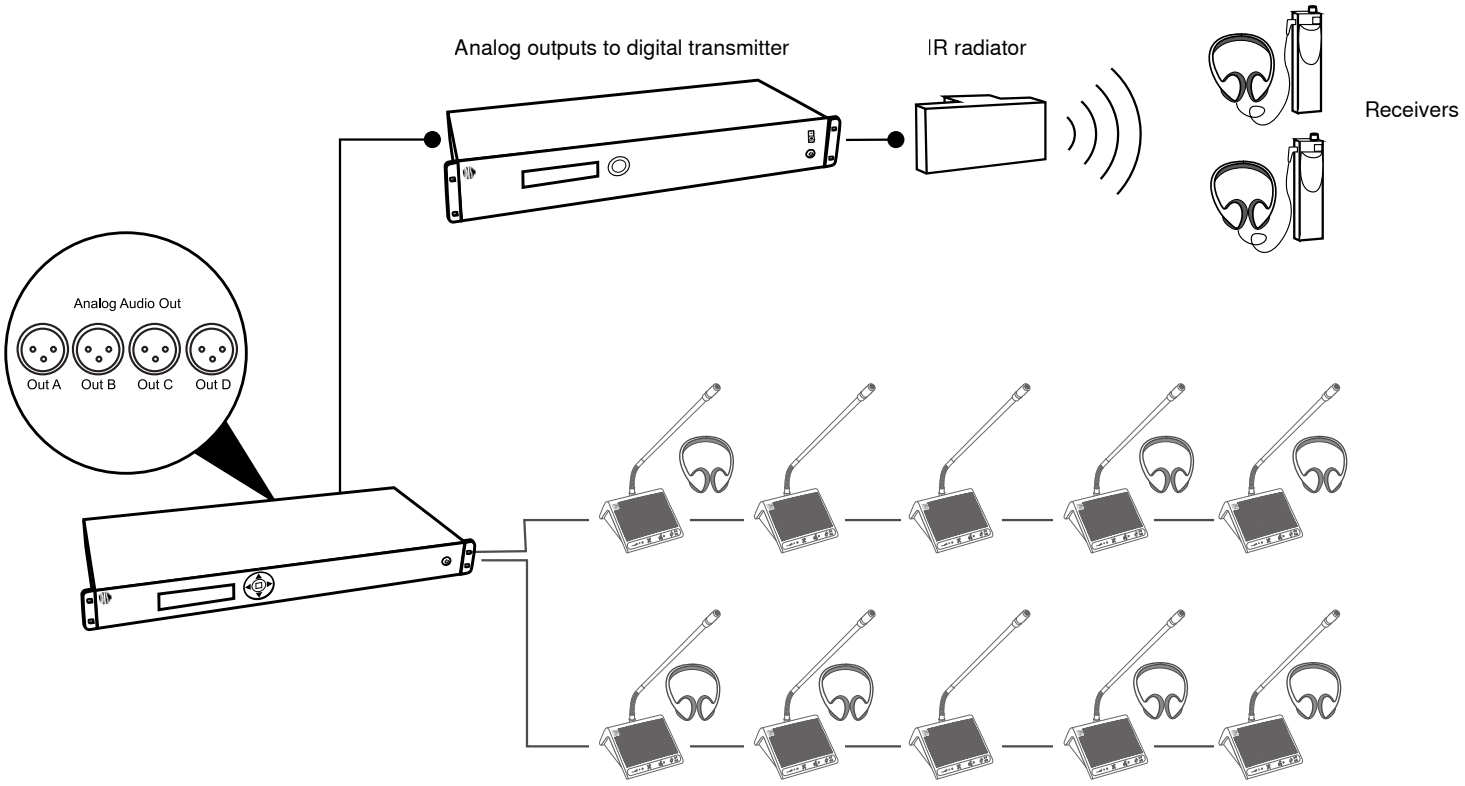


Figure 17. Wireless Language Distribution

5.3.8 **Emergency Signal**

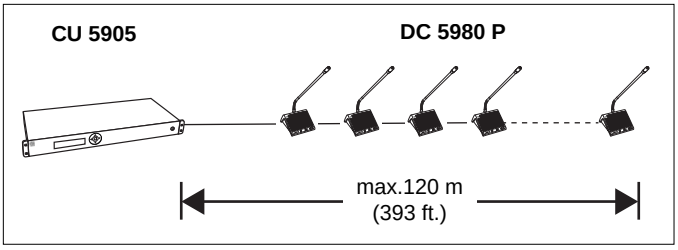
Input 2 is designed to broadcast an Emergency Evacuation Message (EEM), overriding the discussion in the event of an emergency. Connect a switch (normally-open) must be connected to the emergency switch connector. When the switch is closed an "Emergency Evacuation Message (EEM)" audio signal present on the 'In 2' input is distributed to all output channels, overriding all other audio inputs.

Note: There is no level adjustment for input 2. The level of the signal must be controlled externally.

5.4 **Increasing Cable Length with Data Repeaters**

A large discussion unit chain requires additional equipment to ensure a reliable audio signal. The DDS 5900 system transports audio and control data in packets using a proprietary protocol. The CU 5905 tightly manages and synchronizes these packets for the entire discussion unit chain to avoid audio dropouts. The CU requires a strong signal to properly synchronize a large number of units.

The CU supports 120 m of cable before requiring additional equipment to strengthen the signal.



5.4.1 **Cables over 120 m**

There are two solutions to add cable distance

RP 6004

The RP 6004 strengthens the data and adds four additional outputs. This unit does not add power to the chain.

EX 6010

The EX 6010 strengthens the data and adds four additional outputs. This unit is supplies a separate power source from each chain output.

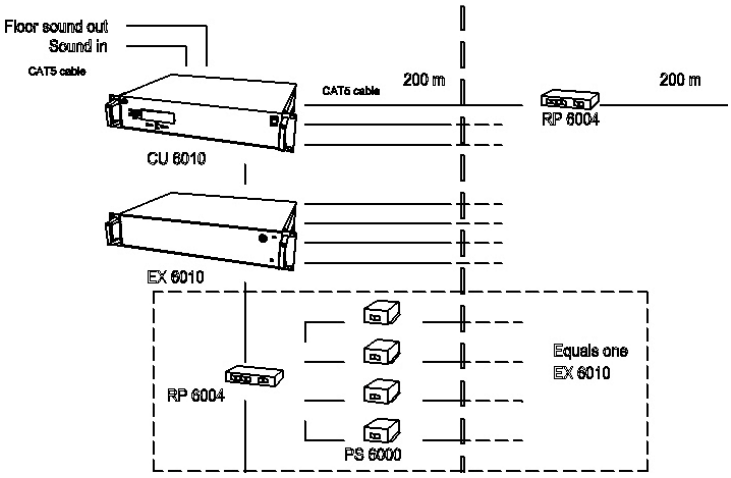


Figure 18. Data Refreshers for Longer Cables

5.5 **Power Requirements**

For most installations, the CU 5905 supplies sufficient power for the discussion units. Depending on the setup, the CU 5905 supports anywhere from 22-48 units at a time without additional equipment.

To maximize the unit count without adding equipment:

- Use shorter cables. More units are supported when the distance is minimized between the CU and the discussion units.
- Use both `ABChain` outputs from the CU. Units must be divided evenly across each chain.

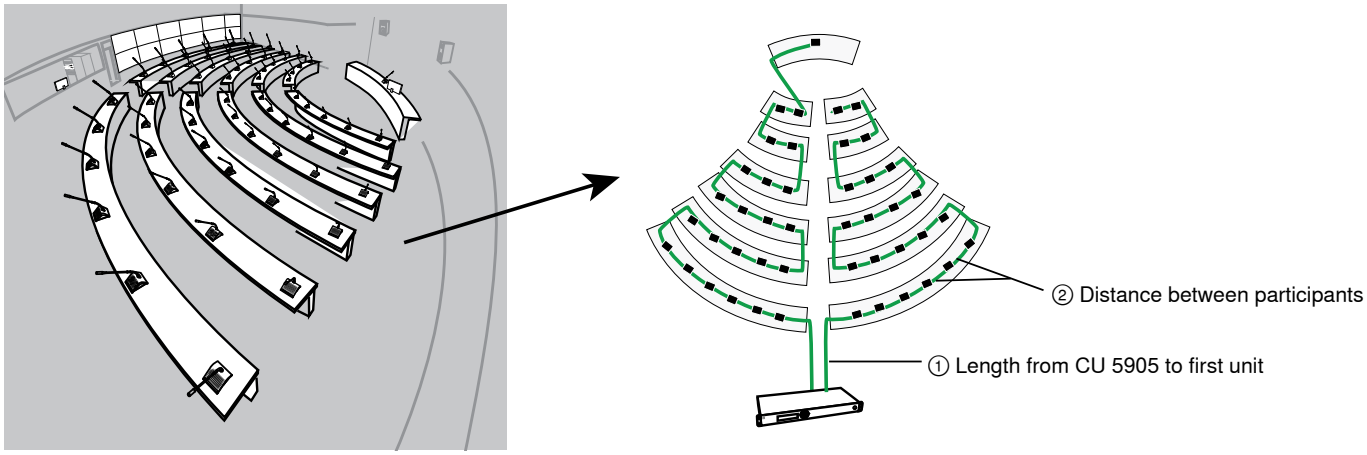


Figure 19. Power Decreases when Cables Increase

5.5.1 **Units Supported by the CU 5905**

The following tables show how to connect the most discussion units without adding additional equipment.

Note: When using two chains, distributable the discussion units evenly across both chains to maximize unit count.

1 Meter between Discussion Units

Distance to DU chain	One Chain	Two Chains
10	44	48
30	39	44
50	34	40
100	21	22

2 Meters between Discussion Units

Distance to DU chain	One Chain	Two Chains
10	40	48
30	36	44
50	31	40
100	11	22

5.5.2 Alternative Setup

Without LS 5900 F Loudspeaker

The CU 5905 supports additional discussion units when the loudspeaker is not used with the DC 5900 F Flushmount discussion unit. The numbers listed below are calculated with a DIS GM gooseneck microphone.

The flushmount units also operate with the Shure MX4xx series gooseneck microphones, though the power consumption is slightly higher. Subtract six units from numbers below to determine the maximum number supported by the CU 5905.

1 Meter between Discussion Units

Distance to DU chain	One Chain	Two Chains
10	57	64
30	51	60
50	44	58
100	21	42

2 Meter between Discussion Units

Distance to DU chain	One Chain	Two Chains
10	50	60
30	45	56
50	36	48
100	11	22

5.5.3 Using Junction Boxes

The JB 604 junction box adds four additional outputs to a point on the DCS-LAN chain. These four outputs are available for short-run connections to DUs, protecting the DCS-LAN chain from technical failures or hot-plugging damage. A single DU can connect to each JB output, with a maximum cable length of 10 m.

1 Chain

Length to First DU	Length Between each JB 6104	Number of JB 6104	Maximum Number of DUs
10 m	1 m	22	54
30 m	1 m	20	39
50 m	1 m	15	34
100 m	1 m	7	21

2 Chains

Length to First DU	Length Between each JB 6104	Number of JB 6104	Maximum Number of DUs
10 m	1 m	26	54
30 m	1 m	24	48
50 m	1 m	24	48
100 m	1 m	16	32

5.5.4 **Adding Additional Power or Data Refreshing**

Equipment can be added to the chain if the installation requires more discussion units.

Model	Additional Delegate Units
EX 6010 Extension Unit (4 outputs)	4x 64 units
PS 6001 Power Kit	57 units

5.6 **Connecting Discussion Units**

Discussion units are connected in series using the two RJ45 ports. The connectors are interchangeable; simply connect the previous discussion unit to one port, and the other port connects to the next unit in the chain.

To protect the equipment, ensure that the Central Unit (CU) **is always off** when connecting or disconnecting the discussion units.

1. Make sure the CU power is turned off.
2. Connect the CU to the first discussion unit with the Cat5 cable.
3. Connect the rest of the discussion units in serial, using the RJ45 jacks on the bottom of each unit.
4. Turn on the CU by pressing the power button. The discussion units will power on. The unit is stable once the control button LEDs stop flashing.

Note: Do not turn off CU power until the system has stabilized

5.7 **Attach the Touch-Button Overlay**

Attach the touch-button overlay to each unit for basic microphone control. The discussion units use soft buttons that change functionality when programmed to different unit types. Button overlays are supplied with the discussion unit or with the central unit.

Warning: Overlays are not reusable. If a unit needs to be reconfigured, carefully remove the overlay and apply another one.

1. Choose an overlay for the unit.
2. Remove the protective paper from the back.
3. Place the overlay in the recess on the front of the unit.

5.8 **Securing the Microphone**

To lock the microphone into place, use the supplied hex key and turn counterclockwise.

DIS GM: Simply insert the microphone into the XLR socket. Adjust the gooseneck for proper position.

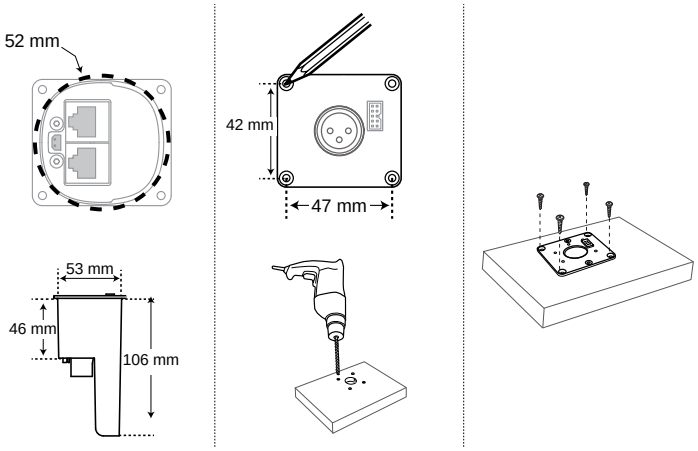
Shure MX4xxRLP: Attach the AC 5901 XLR/Microflex adapter to the microphone. Insert the adapter into the XLR socket of the flushmount unit.

5.9 **Install the DC 5900 F Flushmount Discussion Unit**

5.9.1 **Installing the Base**

The DC 5900 base installs directly onto a table or podium.

1. Determine the location of the microphone and cut a hole with a diameter of 53 mm.
2. Use the base to mark the location for the screw and drill the holes.
3. Secure the base to the table with the screws.



5.9.2 **Attaching the Front Plate**

1. Align the front plate and place it onto the base.
2. Secure the plate to the base using the screws.
3. Snap the cover onto the front plate.

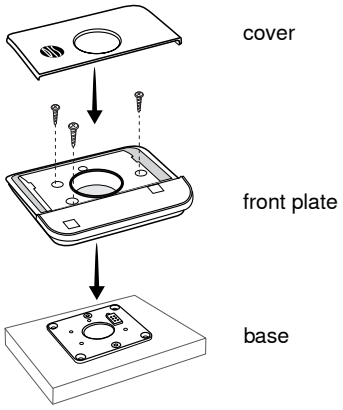


Figure 21. Attaching the Front Plate

5.9.3 Removal

To remove the front plate:

1. Locate the two holes on each side of the front plate.
2. Insert a paper clip in each hole to release the cover.
3. Pull up on the cover to separate the pieces.
4. Unscrew the front plate from base unit.

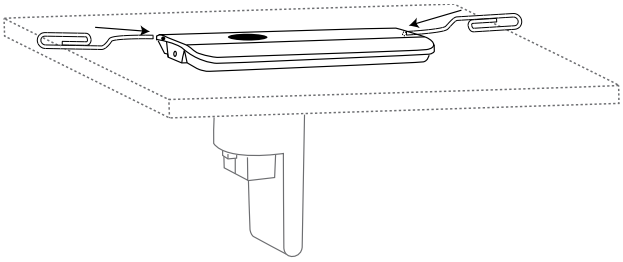


Figure 22. Use Paper Clips for Removal

5.9.4 **Installing the Loudspeaker**

1. Determine the location of the speaker (<1m from the base to accommodate the cable) and cut a hole with a 52 mm diameter.
2. Insert the loudspeaker into the hole and connect the loudspeaker cable to the base unit. Make sure the cable is not pinched.
3. Align the loudspeaker with the base unit. Mark the location for the screws, spaced exactly 78 mm apart.
4. Drill the holes and secure the speaker to the table with the screws.
5. Snap the grill onto the loudspeaker cabinet.
6. Connect the cable from the loudspeaker to the DC 5900 F base

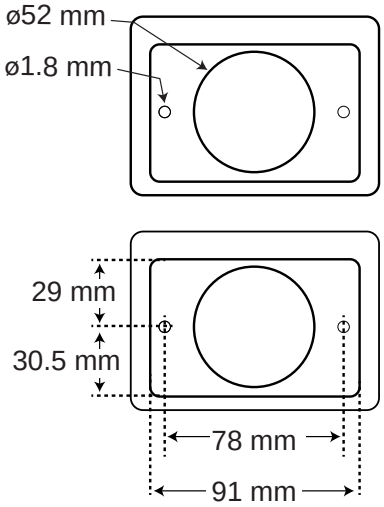


Figure 23. Bottom of LS 5900 F

6 Using the Discussion Units

Once the system as been properly connected, power on the central unit to distribute power to the discussion units.

6.1 Program the User Type

DDS 5900 discussion units are programmable, changing the function of the control buttons to support different user types. The three types are chairman, delegate, or interpreter, each requiring unique control functionality. unit The setting is stored in the unit, and persists after a power cycle or when connecting to a system for the first time.

Note: Flushmount units are not programmable as interpreter stations. Use the portable DC 5980 P unit for transmitting the translation.

6.1.1 Flushmount Units

To program the flushmount DC 5900 F discussion unit as a chairman or delegate, simply attach the button overlay. The overlay contains an embedded chip that automatically programs the unit with the correct button functionality.

6.1.2 Portable Unit

Program the portable units by pressing the volume buttons and scrolling to the desired mode.

1. Power on the unit by properly connecting it to the DCS-LAN chain.
2. Press and hold the '-' and '+' volume buttons. The Speak light flashes to indicate the unit is ready for programming.
3. While continuing to press the volume buttons, press the channel scroll to the unit type. The type is indicated by the combination of channel LEDs; see the table below.

Changing Unit Type

Unit Type	Ch. 1	Ch. 2
Delegate with mute	Off	Off
Delegate without mute	On	Off
Chairman	Off	On
Interpreter	On	On

6.2 **Controlling the Discussion Unit**

DDS5900 discussion units are programmable during setup to support the role of each member of a meeting.

6.2.1 **Chairman**

As the leader of the event, the chairman has several unique features enabled on the discussion unit.

- **Delegate Control:** For meeting management, the chairman uses this button to instantly turn off all delegate microphones and clear the Speaker list.
- **Speaking Rights:**The chairman can always turn on the microphone, overriding delegate units even if it exceeds the maximum number of open channels. Therefore there is no mute button: the chairman simply presses the Speak button to turn the microphone on and off.

6.2.2 **Delegate**

Delegates units are a collection of microphones that contribute to a mix, called `thefloormix`. The number of delegate speakers at one time is limited, requiring several speech buttons on the discussion unit:

- **Speaking:** Turns on the microphone or adds the user to the request queue, depending on the system settings. When the microphone is turned on, the red LED illuminates on the microphone. When the microphone is in the queue list, the Speak LED on the unit will illuminate green and flash when the unit is next in the request queue.
- **Mute Button:** Temporarily mutes the audio from the microphone. While the button is pressed, the delegate retains speaking privileges but the microphone will not pass audio to the floor sound.

6.2.3 **Interpreter**

The primary function of the interpreter unit is to translate the discussion into a foreign language. Participants that do not speak the native language of the discussion rely on the interpreter to participate. Interpretors listen to the floor sound

- **Translation Channel Send:** The interpreter uses the channel selector button to send translated audio over one of the two channels.

Interpretation stations can only be assigned to the Portable 5980P discussion unit.

6.3 **Monitoring**

6.3.1 **Floor Sound**

A speaker available in each unit for sound reinforcement of the discussion. When a microphone is turned on, the signal is routed to all discussion unit loudspeakers. To avoid feedback, the loudspeaker is turned off when that microphone is active.

- **Flushmounted DC 5900 F:** The flushmount system requires the attachment of the LS 5900 F loudspeaker.
- **Portable DC 5980 P:** Each portable discussion unit includes an attached loudspeaker.

Additionally, floor sound is available at the headphone output of discussion units*. The floor sound is selected when the channel LED is off.

*Excludes flushmount units with the FP 5921 F front plate. These are

6.3.2 Loudspeaker Adjustment

Loudspeaker volume is a system setting that applies to all connected units. Volume adjustment is attenuation only, ranging from -0 dB (no attenuation) to mute. To adjust the volume:

From the Browser Interface

Go to the Loudspeaker Control page (`Audio` > `LoudspeakerControl`)

From the CU

Scroll to the Loudspeaker Menu (`loudspk.control` > `loudspk.volume` > `db`

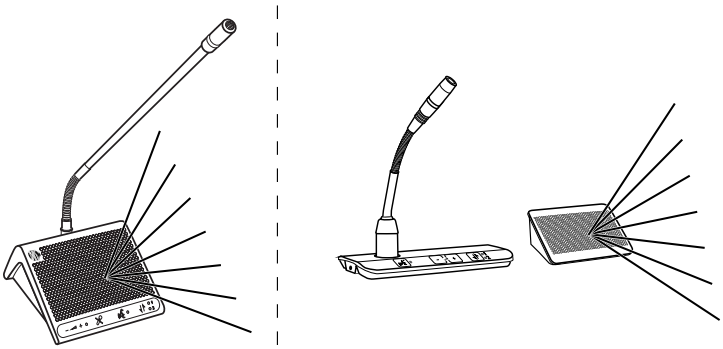


Figure 24. Use the Loudspeaker for Sound Reinforcement

6.3.3 **Language Interpretation**

Two channels of language interpretation are supported in the DDS 5900 system for delegates and chairmen. Translation audio is available at the headphone connector for all portable DC 5980 P and flushmount DC 5900 F units with the FP 5981 F front plate.

To listen to one of the channels, follow these steps:

1. Connect headphones to the headphone jack on the side of the discussion unit.
2. Select a channel by pressing the selector buttons on the front of the unit. When no channel LED is illuminated, the floor sound is selected.
3. Adjust the audio level of the headphones using the volume buttons.

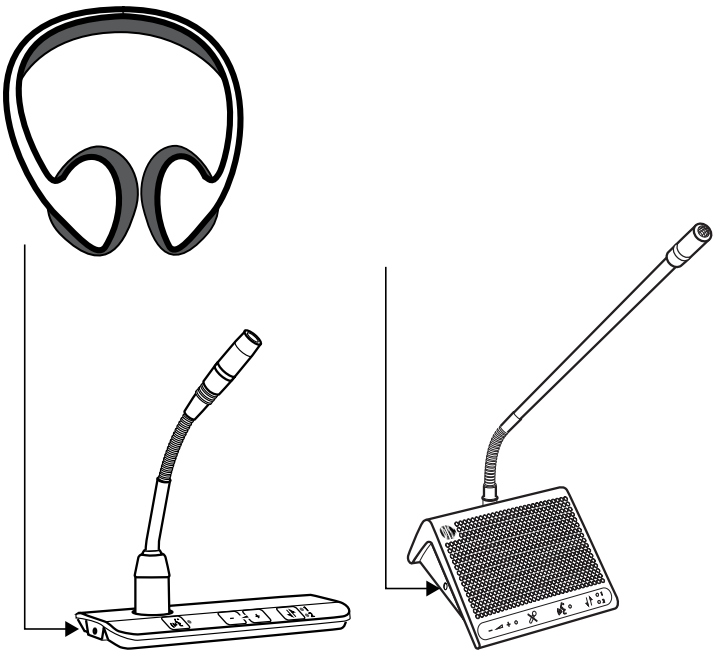


Figure 25. Use Headphones for Listening to Language Translation

7.1 Control Software

For comprehensive management and remote control of the system, open the web app on a computer or tablet. The Central Unit (CU) hosts a webserver that can be accessed from any web browser on any computer connected to the network. The web app offerers advanced parameters for setting up the system, and enables the chairman or moderator to manage microphones using participant names and seat numbers.

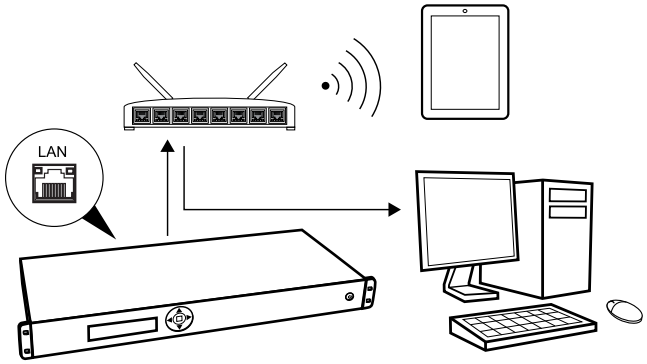


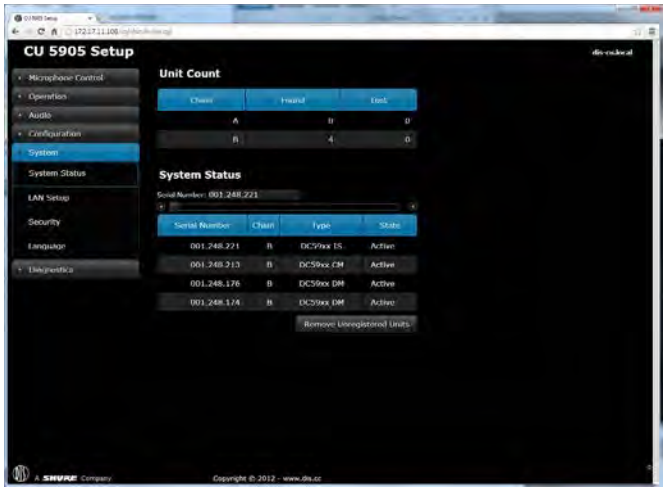
Figure 26. Connect to the CU 5905

Note: The computer network is separate from the discussion unit network (DCS-LAN).

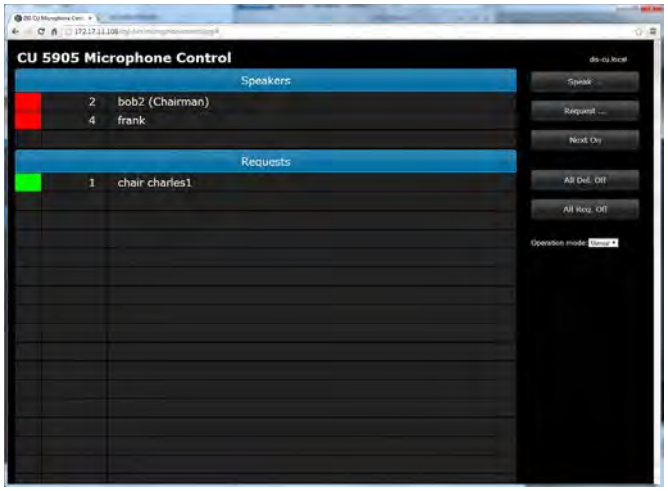
System Requirements

For best performance, always update the browser to the latest released version. The following browsers function properly with the system interface:

Internet Explorer (IE) 8+
Firefox 10+
Safari
Chrome



System and Discussion Setup



Discussion Control

Figure 27. DDS 5900 Web App

7.1.1 **Connecting for the First Time**

Follow these instructions to open the browser interface on a computer for the first time.

1. Connect the computer to the TCP port on the CU 5905.
2. Power on the equipment.
3. Assign the computer to automatically obtain an IP address. This enables the computer to automatically connect to the CU.
4. Acquire an IP address by selecting `Dynamic` from the `LAN Setup > Acquire IP addr.` window.
5. View the IP address: `LAN Setup > IP address setup`.
6. Open the internet browser in the computer.
7. Type 'http://IP-address', where 'IP address' is the address noted from the CU 5905.
8. The CU 5905 browser interface opens.

7.1.2 **Assigning the Network Address**

Access to the DDS 5900 interface is available from two network addresses: IP address and hostname. Typing either address into a browser will access the interface of the connected CU.

7.1.3 IP Address

Select 'Dynamic' if the CU is connected to a network with a DHCP server. Otherwise select 'Static' and assign a fixed IP address to the CU. Default IP configuration is "Dynamic".

Select 'Apply Changes' to save the changes made.

The actual IP address can be found in this screen or by using the interactive menu on the CU 5905:

`LAN setup > IP address setup > IP address > Actual IP address.`

7.1.4 Hostname

The hostname is a user-defined name can be assigned to the device to access the browser instead of using the IP address. The hostname is titled in a logical manner to easily identify the component on the network. More importantly, the hostname will not change on its own (unlike the IP setting), making it ideal for bookmarking.

For example, if the system is set up in the primary meeting room, the hostname could be called, "MainRoom". The address would be: http://mainroom.local

1. Go to the LAN Setup page (`System > LAN Setup`).
2. Under CU hostname, select the default name and delete it.
3. Enter the new hostname.
4. Select the `Apply Changes` button to save the name.
5. Check the address by typing into the browser: http://hostname.local
6. If desired, bookmark the page.

7.1.5 **Language Setting**

The browser interface is supported in a variety of languages. Go to `System > Language` to select the desired language.

	Crnogorski
	Srpski
Albanian	Shqip
Arabic	اللغة العربية
Bosnian	Bosanski
Bulgarian	български
Chinese (Simplified)	中文（简体）
Chinese (Traditional)	中文（繁體）
Croatian	Hrvatski
Danish	Dansk
English	English
French	Francais
German	Deutsch
Greek	Ελληνική
Icelandic	Íslenska
Italian	Italiano
Japanese	日本語
Korean	한국인
Macedonian	македонски
Montenegrin	Црногорски
Norweigen	Norsk
Persian	فارسی
Polish	Polski
Portuguese	Português
Russian	русский
Serbian	Српски
Slovenian	Slovenski
Spanish	Español
Swedish	Svenska
Thai	ภาษาไทย
Vietnamese	Tiếng Việt

7.2 Security

DDS 5900 components use a proprietary codec algorithm to prevent unauthorized devices from listening to the audio signal. To further protect the discussion, assign a password to the browser interface and enable security features on wireless routers.

7.2.1 Password Protect the Browser Interface

Assign a password to restrict access to the browser interface. A password will enable only an administrator or technician to change system and meeting settings.

1. Connect a computer to the DC 5905 Central Unit (CU).
2. Access the browser interface using the CU hostname or IP address.
3. Go to the Security page (`System` > `Security`)
4. Enter a valid user name and password.
5. Select Change Password to save the login information.

Note: The user name and password are deleted when the system is reset to factory default settings.

7.2.2 Removing the Password

To clear the password access to the CU, restore factory default settings.

Note: Resetting to factory defaults will erase all delegate, system, and IP settings.

From the Hardware

a) Go to the front panel of the CU.
b) Scroll the main menu to `Restore Factory Defaults`
c) Press the center button to enter menu
d) Press the center button again to confirm the reset.
e) Wait for the system to reboot. The computer will lose connection to the browser interface during this time.

From the Browser Interface

f) Open the CU browser interface
g) Go to `Configuration` > `Factory Defaults`
h) Select the Reset button to reset the system.
i) Wait for the system to reboot. During the reboot process, the computer cannot access the browser interface.

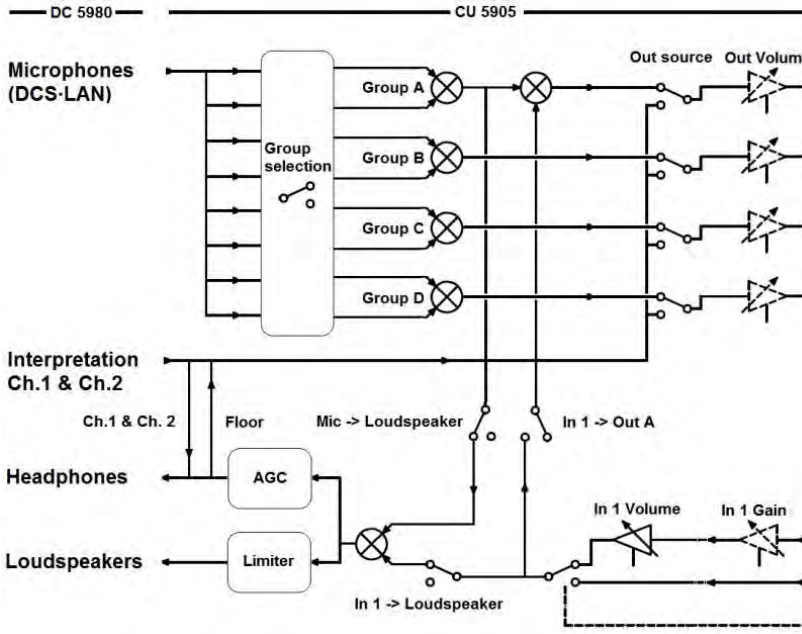
7.2.3 Isolating the Network

For maximum security, isolate the DCS-LAN network with a dedicated computer or a protected router.

- Dedicate one computer for DDS 5900 control. Connect it directly to the CU LAN port. This ensures that wireless devices cannot access the IP address of the control software.
- If multiple computers or tablets are required, assign a password encryption for the router. The most effective standard is the Wireless Protected Access II (WPA2), which uses Advanced Encryption Standard (AES) for encryption. Reference the router user guide to set it up.

7.3 **Audio Settings**

Use the DDS 5900 audio diagram as a reference when making audio adjustments.



7.3.1 **Loudspeaker**

7.3.2 Volume

Volume of the loudspeakers can be turned down to accommodate quieter installations. The attenuation setting applies all connected discussion units in the system.

- Browser Interface: `Audio` > `LoudspeakerControl` > `LoudspeakerVolume`
- CU: `Loudspk.control` > `Loudspk.volume`

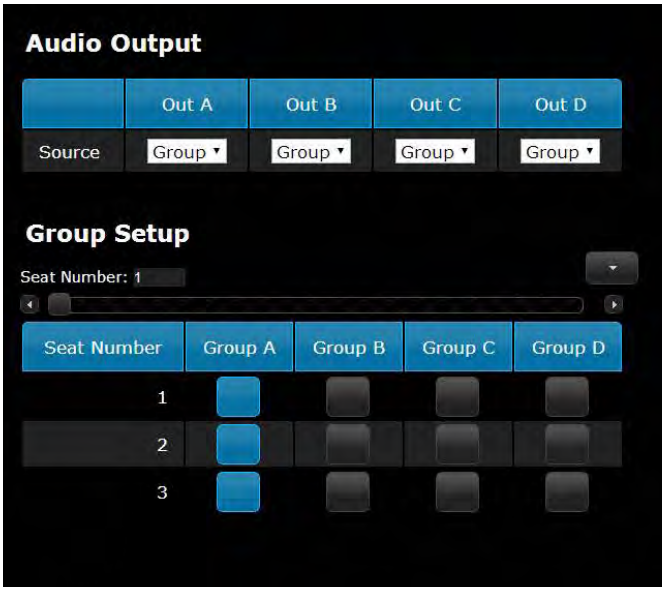
7.3.3 Audio Source

Group A is always used as the source for the discussion unit loudspeakers. By default, all discussion units are routed to this group.

Removing a Discussion Unit

Deselect Group A to remove a discussion unit microphone from the loudspeaker bus. Go to `Audio` > `AudioOutput` > `GroupSetup`

Tip: Adjust several microphones at once using the dropdown arrow next to Group Setup.



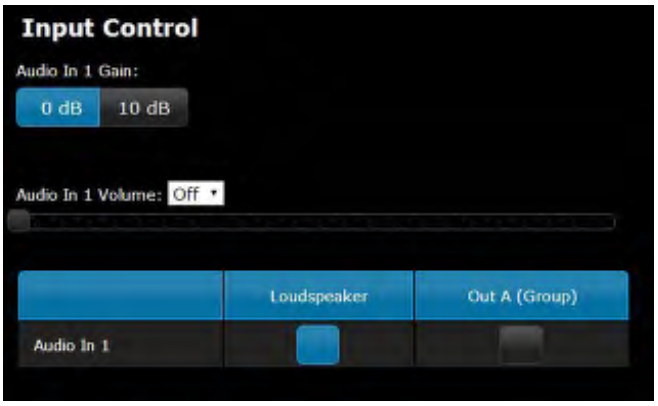
Add an Audio Input

An additional audio source can be routed to the loudspeakers. Make sure the loudspeaker box is selected at the `Audio` > `Input/Output Control` > `Input Control`.

- Adjust the input gain according to the sound source (0 db or 10 db)
- Adjust the volume to the loudspeaker from 0 db to -40 db, or mute.

7.3.4 **Adding an External Audio Source**

For teleconferencing or internet calling, use the CU audio input 1 to add the additional audio source to the discussion.



1. Connect the audio output of a computer or teleconferencing unit to the Audio Input 1 on the CU 5905.
2. Open the control browser to `Audio` > `Input/Output Control` > `Input Control`.
3. Select the input gain according to the output of the external device.
4. Make sure the Loudspeaker is selected (default).
5. Make sure Out A (Group) is unselected to avoid a feedback loop.
6. Adjust the volume of the audio input for natural speech levels at the discussion unit.

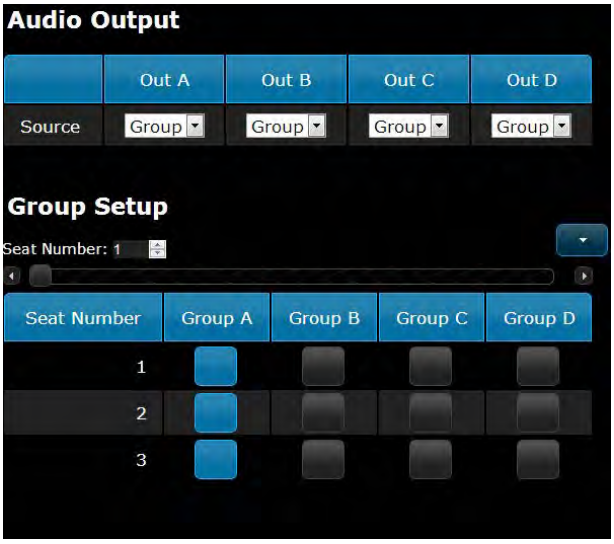
7.3.5 Emergency Audio Signal

To prepare for an emergency, connect an Emergency Evacuation Message (EEM) audio signal to Input 2. A block connector provides a 'normally open' switch that when closed, the emergency signal is distributed to the loudspeakers and all input and output connections.

Note: There is no volume control available for setting the volume on 'In 2'. The volume has to be set at the equipment generating the "Emergency Evacuation Message (EEM)" audio signal.

7.3.6 **Analog Outputs**

To isolate certain microphones or translation channels, four groups available for routing audio signals. Each group can then be assigned a separate analog output for recording, language distribution system, or teleconferencing unit, or external PA.



Go to `Audio` > `Audio Output` > `Group Setup`.

- **Group:** Four separate groups are available for isolating specific microphones
- **Floor:** All active microphones are routed to the floor sound. If the Audio Input 1 has been assigned to the loudspeaker.
- **Channels 1 & 2:** Interpretation channels can be sent to a language distribution system.

Note: When 'Group' is selected for 'Out A', the 'Group A' is the source for the three other outputs.

Note: If 'Floor, Ch.1, Ch.2' is selected for an output (Out A, B, C or D), the corresponding group is disabled in the 'Group Setup'

8 Running a Discussion

8.1 Language Translation

The DDS5900 system supports two channels of language translation. Interpreters use the portable DC 5980 P to monitor the discussion and send translations to the rest of the participants.

1. Begin by programming the portable DC 5980 P as an interpreter station.
   a) Power on the unit by properly connecting it to the DCS-LAN chain.
   b) Press and hold the '-' and '+' volume buttons. The Speak light flashes to indicate the unit is ready for programming.
   c) While continuing to press the volume buttons, press the channel button. Interpreter mode is set when both channel LEDS are illuminated.
2. Select one of the two channels for audio transmission. The channel LED will illuminate to indicate the selected channel.
3. Program another DC 5980 P for the second language and select the other channel for transmission.
4. Select the language channel for each user, according to the spoken language.

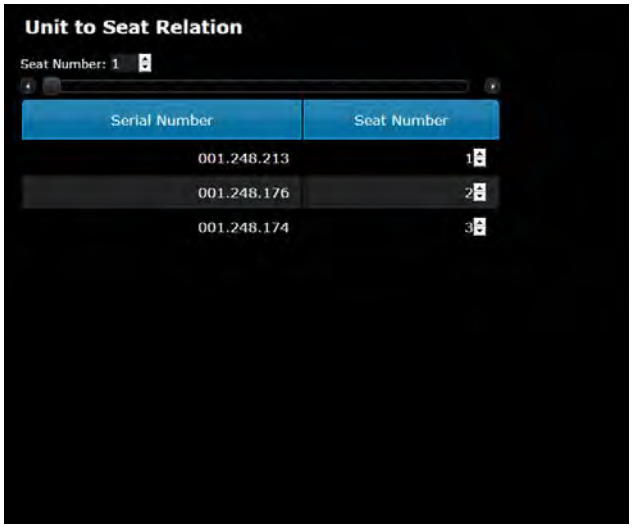
Flushmount DC 5900 F units are not programmable as interpreter units.

8.2 **Assigning Names and Seat Numbers**

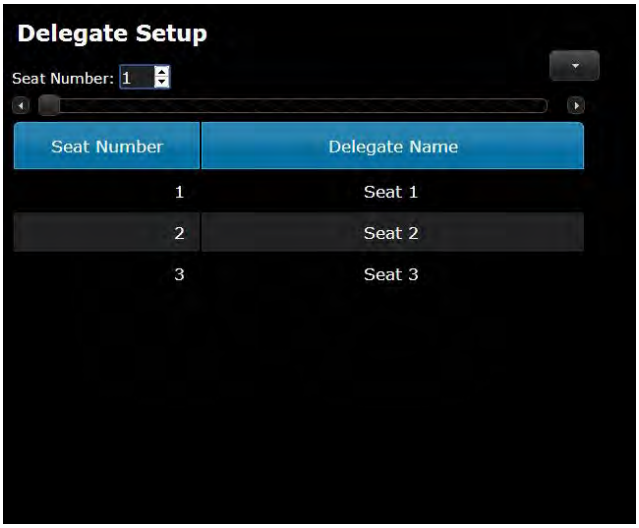
When the discussion begins, the chairman or discussion moderator will need to refer to the delegates by either name, seat number, or both. The proper assignment of names and seat numbers is critical to ensuring the continuity of the discussion.

When logging in with the browser interface to an installation for the first time, each delegate unit appears with its default name. Units are automatically assigned a seat number. Chairman units also appear in the delegate setup page. Use the delegate setup page to match the units to the anticipated seating chart.

1. Make sure all units are connected and functioning.
   - Go to the System Status page for details `System` > `System Status`
   - All properly connected delegate units are listed with a default serial and seat number automatically assigned by the software.
   - If units are disconnected, they are marked with a yellow indicator in the list.
   - The units can be removed from the list either individually or as a group by clicking the yellow button.
2. Reassign seat numbers to match the actual seat numbers in the room or on your seating chart.
   a) Go to the Unit to Seat Relation page `Configuration` > `Unit to Seat Relation`.
   b) Match the entries in the seat table to the corresponding units in the room by placing the cursor over the seat number field. The light ring on the microphone flashes red.
   c) Change the seat number by clicking in the field.
3. Draw a seating chart, or diagram, that represents the room. Number each seat that requires a discussion unit. Add delegate names to the seating chart.
4. Go back to the Delegate Setup page (`Configuration` > `Delegate Setup`) and change the descriptions next to the assigned seat numbers to the appropriate delegate names. Press enter to save the new name.



Reassign Seat Numbers



Add Delegate Names

8.3 Microphone Operation Modes

The operation mode determines how delegate microphones function during a meeting. Several factors may affect the meeting requirements and the manner in which the meeting run: room size, number of participants, formality of the event, and amount of technical support on staff. The operation mode addresses these factors with four presets to control the microphone behavior.

To change the mode:

- CU hardware: `DelegateSetup` > `OperationMode`
- Browser interface: `Operation` > `OperationMode` or from the `MicrophoneControl` page.

Description of Operation Modes

The following is a description of each mode **once the Speak button is pressed**:

Manual

Adds the delegate to a request queue that is managed by the chairman. The Chairman selects delegate microphones from the queue list, and turns them on and off. Manual is the only mode in which the web browser is required to manage speakers.

Auto (Automatic)

Automatically turns on the delegate microphone if there is room in the speaker list. In this mode, there is no request queue: if the Speaker List is full, the delegate microphone does not turn on.

FIFO (First In, First Out)

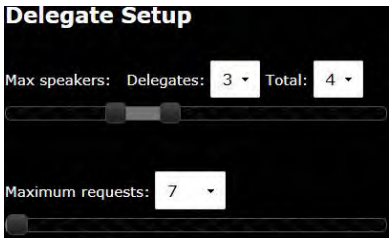
Automatically turns on the delegate microphone if there is room in the speaker list. Once the list is full, delegates are placed into a chronological request queue. The microphone turns on automatically once a space is open in the speaker list.

VOX (Voice Activation)

The microphone automatically turns on when a speaker talks into the microphone or presses the Speak button. The microphone automatically turns off after the speaker is finished. In this mode, there is no request queue: if the Speaker List is full, the delegate microphone does not turn on.

8.4 **Maximum Speaker Setting**

To improve speaker management and clarity of the audio, there is a limit to the number of speakers at the same time. Up to eight chairman and delegate microphones can be open at once. There are several settings:



Max speakers

- **Total:** Total number of open delegate and chairman units. This is the absolute maximum number of people that can address the floor at once.
- **Delegate:** Number of delegates microphones that can be open at one time.

Maximum Requests

Total number of delegates that can be in the request queue at one time.

Note: Interpreter units are always open to support the translation of the discussion. The following settings do impact the interpreter stations.

8.4.1 **Scenarios**

8.4.2 Chairman Can Speak At Any Time

Set the total number of speakers to one (1) higher than the maximum number of delegates. If there are two chairmen, set the number to two (2) higher.

8.4.3 Using FIFO Mode

First In, First Out (FIFO) mode automatically turns on microphones based on a chronological queue list. This mode works best if the maximum number of delegates is set to one (1) so that the delegate must wait to speak until the other is finished.

8.5 **Managing Speakers from the Web Browser**

For increased control over the discussion, the chairman uses web interface to activate microphones. The Microphone Control page is a dedicated page for controlling the speaker list and request queue. The chairman can manually turn on/off microphones, or simply monitor the list in an automatic mode. Using the interface, the chairman can easily:

- **Click** on a delegate name to turn on the microphone, or add them to the request queue.
- **View** who is speaking and who is waiting their turn to speak

Begin by opening the browser interface. Select the Microphone Control button from the main menu. The dedicated page for microphone control will open.

There are two main lists from the Microphone Control page:

Speaker List (Red)
The speaker list displays the name and seat number of each active microphone. The list displays in chronological, with the most recently activated microphone at the top of the list. A red box turns on next to the seat number for quick visual identification.

Request Queue (Green)
Delegates in this list are next up for speaking. Primarily useful when operating in First In First Out mode (FIFO), the queue chronologically lists all delegates that have pressed their speak button. Once an opening is available in the speak list, the delegate at the top of the queue list is automatically turned on.

8.5.1 **Chairman Control**

The following buttons are available to the chairman for controlling the delegate microphones:

Speak
Instantly turn on a delegate's microphone. Select this button to view all discussion units in the system, including those in the request queue. Select a delegate to add them to the Speak list.

Request
Add a delegate to the request queue to put them in line for speaking. Select from any delegate in the system, excluding the chairman.

Next On
Activates the delegate microphone at the top of the request queue. If the maximum speaker count has been reached, the new speaker replaces the last one on the list.

All Del. Off
Turns off all delegate units, leaving only the chairman in the speaker list. The same button appears on the chairman discussion unit.

All Req. Off
Removes all delegates from the request queue.

9 Troubleshooting

This section contains a simple troubleshooting guide.

It is intended to be used to troubleshoot problems due to incorrect installation. If more serious faults or problems arise, the installer should contact a qualified technician.

The light rings on the microphone are constantly flashing when installed in the units.	• Check the cables. Digital communication from the Central Unit to the Discussion Units has not been established • Ensure that all the connectors on all the cables are firmly inserted in the sockets on the units • Check that the feed cables from the Discussion Units are properly inserted into the 'DCS-LAN' socket on the CU 5905.
The 'Del. Off' button on the Chairman Unit does not switch off the Delegate Units	• Check to make sure the unit is configured as a Chairman Unit • Check to make sure the other units are configured as Chairman or Interpreter Units. Please refer to 'Configuration of the Unit' section.
The audio from an Interpreter Unit cannot be heard in the headphone of Delegate or Chairman Units	• Check to make sure the unit is configured as an Interpreter Unit. Please refer to 'Configuration of the Unit' section. • Check the headphone volume control on the units • Check the channel selection on the Discussion Units • Check that the headphone plug is firmly inserted in the headphone jack • Check that the light ring on the microphone on the Interpreter Unit is illuminated and that the gooseneck microphone is firmly inserted in the socket
There is no audio coming from the built-in loudspeakers	• Check the 'Loudspeaker Volume' setting using either the interactive menu on the CU or using the browser control. • Check the setting 'CU 5905 Setup > Audio > Loudspeaker Control > Microphone -> Loudspeaker' is set to 'On', using the browser control. • Check the settings in 'CU 5905 > Audio > Audio Output > Group Setup' that the seats are selected in 'Group A', using the browser control. 'Group A' is always used as the source for the built-in loudspeakers. If a unit is not selected in 'Group A', the audio from the unit will not be heard in the built-in loudspeakers.
There is no audio from the built-in loudspeakers on one or more Delegate or Chairman Units	• Check in 'CU 5905 > Audio > Audio Output > Group Setup', using the browser control. Make sure the seat is selected in 'Group A'. 'Group A' is always used as the source for the built-in loudspeakers. If a unit is not selected in 'Group A', the audio from this unit will not be heard in the built-in loudspeakers.
A microphone cannot be turned 'On'	• Check the settings 'Max Delegate Speaker' and 'Max Total Speakers'. • Check the 'Operation Mode'.
The CU 5905 browser application will not open on a PC or iPad	• Using the interactive menu on the CU, check the IP address: 'LAN setup/IP address setup/IP address'. Use this IP address using the browser • Verify that the CU5905 and the PC are connected to the same network • Check the LAN cable connections
The CU 5905 browser application will not open on an iPad	• Check the IP address, using the interactive menu on the CU: 'LAN setup > IP address setup > IP address'. Use this IP address in the browser. • Verify that the iPad is connected to the proper wireless access point • Check that the CU 5905 is connected to the same network as the wireless access point

9.1 Factory Default Reset

Note: Resetting to factory defaults will erase all delegate, system, and IP settings.

From the Hardware

a) Go to the front panel of the CU.

b) Scroll the main menu to `Restore factory def.`. Press the center button to enter menu

c) Press the center button to select `OK` and confirm the reset.

d) Wait for the system to reboot. The computer will lose connection to the browser interface during this time.

From the Browser Interface

e) Open the CU browser interface

f) Go to `Configuration` > `Factory Defaults`

g) Select the Reset button to reset the system.

h) Wait for the system to reboot. The computer will lose connection to the browser interface during this time.

9.2 Event Report

To assist in troubleshooting, a system-wide report is available from the moment the CU powers on. Go to `Diagnostics` > `Report` and select Generate to view the report in a new window. Save the file to the computer and print a copy to best help the Shure support group diagnose the issue.

10 Firmware Update

10.1 Update System Firmware

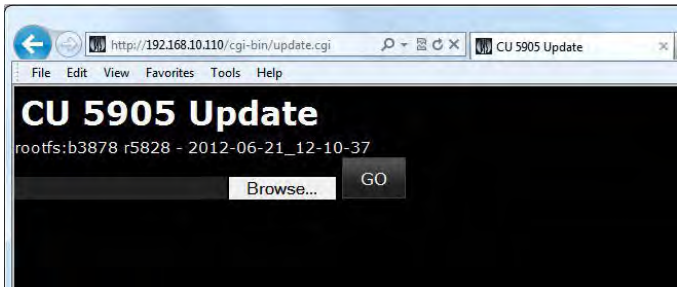
A firmware update may be necessary for compatibility with other hardware, which is performed through the web browser. Follow the firmware update instructions to update the unit as required for this installation.

10.2 Firmware Update

If a firmware update of the CU 5905 Central Unit is needed, it is done through the browser interface:

Type the 'IP address' or 'Host Name' followed by '/cgi-bin/update.cgi' in the browser as shown in the next picture. The CU 5905 Update window is displayed:

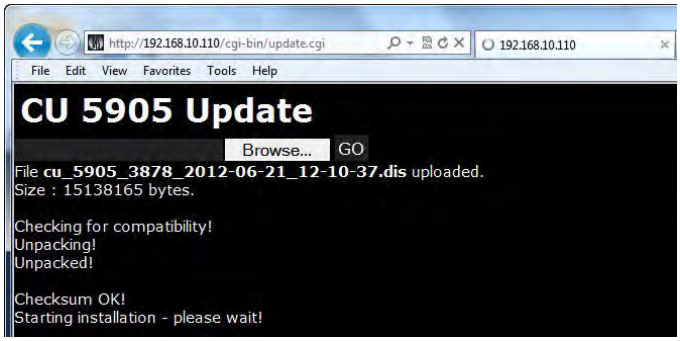
Figure 28. Browsing for Update File



The update file is located on the PC using the 'Browse' button. The update file has the format 'cu_5905_xxxxxx.dis'. If an update is available, the update file is delivered from your support source.

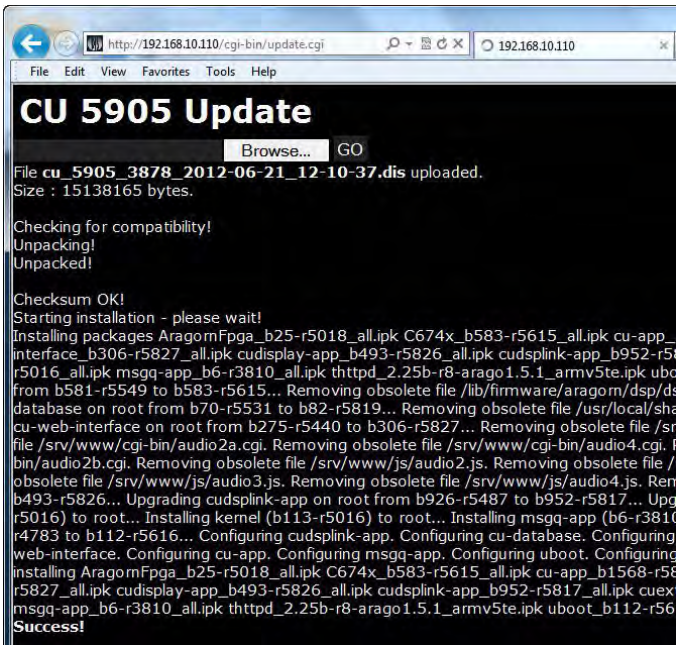
After selecting the update file, click the 'Go' button and the update process begins:

Figure 29. Update File is Uploaded



The update process may take several minutes. During the update process information is displayed. When the process is finished the word 'Success' is displayed:

Figure 30. Update is Finalized



11 External Control Protocol

The DDS 5900 Digital Discussion System features an Ethernet connection for the purpose of providing an interface to control and monitor the system. By setting up a simple (raw) TCP/IP socket connection to the CU 5905 Central Unit, control options are available.

This section describes the TCP/IP raw socket protocol for communicating with the DDS 5900 Discussion System. This protocol provides a short set of commands, enabling a third part control application to monitor and/or control system status of a DDS 5900 Discussion System.

Some examples of functionally available using the protocol:

- Setting a microphone in speak or in request
- Retrieving a list of seats available in the system.

This interface supports applications developed by customers, so the protocol is deliberately kept simple. The External Control protocol offers a means for supplementing the control functionality available through the DDS 5900 Browser interface and the CU 5905 interactive display, however some commands and settings available in the browser interface and on the CU 5905 interactive display are not available using the 'External Control Protocol'

Customer applications can include but are not limited to AMX® or Crestron® room control systems, PC or micro controller based applications, e.g., for button mimics and camera control applications.

11.1 General Protocol Behavior

11.1.1 TCP/IP socket connection

A TCP/IP socket connection to the CU 5905 must be established for the External Control protocol to become available. Configuration of the CU 5905 connection to the Ethernet must be defined from the CU interactive front plate control/Browser interface and an IP address for the CU 5905 must be assigned in the network.

Choose either a static IP address or an IP address assigned through DHCP. It is convenient to ensure, that the CU 5905 ends up with the same IP address at each start up.

Knowing the IP address, the only additional information required for setting up a TCP/IP connection is the Port Number:

Port Number = 3142

Example: Test connection to CU via Putty®: If the CU 5905 is assigned IP address 192.168.1.100, the external application must connect the TCP/IP socket to the address 192.168.1.100:3142.

Knowing the IP address of the CU 5905 a connection can be set up using a simple terminal program like Putty.

1. Download at www.putty.org
2. Start Putty.
3. Insert IP address and Port Number.
4. Select 'Raw' for the Connection Type.
5. Press 'Open' to establish connection to the CU. Control is now possible.
6. Type 'help' to see a list of commands available.

11.1.2 Command Structure (from External Control to CU 5905)

To control the CU an External Control sends commands to CU 5905 included in command lines. Commands lines are build up in a very simple manner:

```
<command><SP><data><CR>
<command><SP><data><LF>

<SP>         Space - 0x20 = 32
<CR>         Carriage return - 0x0D = 13
<LF>         Line Feed - 0x0A = 10
```

Command lines are terminated by a Carriage Return **<CR>** or Line Feed **<LF>** or both. In order to be able to communicate with Windows systems, Linux systems or other systems, the CU understands both types of command line terminations.

Notice also, there is a space between the command and data. If a command does not carry any data, space is possible but not required.

The CU is not sensitive to upper/lower case.

Example:

```
mic_on 212<CR>
```

Turn on microphone at seat 212. Command = **mic_on**, data = **212**. The 'mic_on' command carries a seat number as data.

11.1.3 **Command Structure (from CU 5905 to External Control)**

Command lines out of the CU 5905 are just as simple:

```
<command><SP><data><CR><LF>

<SP>         Space - 0x20 = 32
<CR>         Carriage return - 0x0D = 13
<LF>         Line Feed - 0x0A = 10
```

Again, to satisfy most systems, the CU terminates command lines by including both **<CR>** and **<LF>**.

11.1.4 **Seat Numbering**

Discussion Units are identified by means of a seat numbers. Each Discussion Unit is assigned a seat number. This is done automatically for all discussion units, when they are connected to the CU 5905. The CU 5905 Browser interface is used to change seat numbering.

Seat numbers must be in the range from 1 to 65535.

11.1.5 **CU 5905 Reply to Commands**

Generally, a command from an external application is replied to by the CU. But, reply to a command is produced only if actions are taken by the CU due to the command.

Example: When a 'mic_on' command results in a microphone being turned on, the CU replies with a 'mic_on' command. On the other hand, if a 'mic_on' command does not lead to turning on a microphone, the CU does not produce any reply.

There can be several reasons for the CU to reject turning on a microphone:

- The microphone is already on
- The microphone is no longer connected to the system
- Speak list is already full ('max_speakers') and delegate interrupt is not 'on'

11.1.6 **Retrieving System Status**

The CU supports streaming of status. When an External Control issues a 'mic_status' or 'audio_status' command, the CU responds by sending the microphone system status. The same applies to 'audio status'. Therefore, it is possible for an External Control to synchronize with the CU status.

11.2 **Microphone Control**

11.2.1 **Commands from External Control to CU 5905**

11.2.2 Turn on microphone

mic_on <seat no><CR>

Instruct the CU to turn on the microphone at seat_no.

If the CU turns on the microphone, it replies with the **'mic_on'** command. If the microphone also appeared in the request list, it is taken out of the request list and the CU issues the **'mic_request_off'** command.

11.2.3 Turn off microphone

mic_off <seat no><CR>

Instruct the CU to turn off the microphone at seat_no.

If the CU turns off the microphone, it issues a **'mic_off'** command.

11.2.4 Turn off all the delegate microphones

mic_all_delegates_off<CR>

Instruct the CU to turn off all delegate microphones.

A Chairman is not turned off.

The CU responds to the command by issuing the **'mic_off'** command for each microphone that is turned off.

11.2.5 Put a microphone in the request list

mic_request_on <seat no><CR>

Insert a microphone into the request list.

If the CU inserts the unit into the request list and it issues the **'mic_request_on'** command.

11.2.6 Remove a microphone from the request list

mic_request_off <seat no><CR>

Remove a microphone from the request list.

If the CU removes the unit from the request list and it issues the **'mic_request_off'** command.

11.2.7 Clear the request list

mic_all_requests_off<CR>

Clear the request list.

The CU responds by issuing the **'mic_request_off'** command for each microphone that is removed from the request list.

11.2.8 Set the next microphone on

mic_next_on<CR>

Turns off the first microphone in the speak list and turns on the first microphone from the request list.

If a microphone is turned off, the CU issues the **'mic_off'** command.

If a microphone is turned on, the CU issues the **'mic_on'** command and the **'mic_request_off'** command.

11.2.9 Set the maximum number of total speakers

max_total_speakers <max total speakers><CR>

Maximum number of speakers allowed to speak.

<max total speakers> Can be set from "1" to "8"

The CU issues the **'max_total_speakers'** command.

11.2.10 Set the maximum number of delegate speakers

max_speakers <max speakers><CR>

Maximum number of delegates allowed to speak.

<max speakers> Can be set from "1" to "8"

The CU issues the **'max_speakers'** command.

11.2.11 Set the maximum number of requests

max_requests <max requests><CR>

Maximum number of delegates allowed in the request list.

<max requests> Can be set from "0" to "250".

The CU issues the **'max_requests'** command.

11.2.12 Set the Operation Mode

mic_mode <mode><CR>

Set the system operation mode.

<mode> Can be set to "auto" (Automatic), "fifo" (First-in-first-out), "manual" (Manual) or "vox" (Voice Active)

The CU issues the **'mic_mode'** command.

11.2.13 Set the Interrupt Mode

mic_interrupt <mode><CR>

Set the ability to interrupt. Defines, whether microphones should interrupt or not.

<mode> Can be "on" (microphones interrupt) or "off" (microphones do not interrupt)

The CU issues the **'mic_interrupt'** command

11.2.14 Retrieve the Microphone Status

mic_status<CR>

Ask the CU to deliver status of the system (microphones in speak, and microphones in request list).

The CU issues the microphone system status. The status is a list of commands from the CU:

seat_number (for all microphones in the system)
mic_mode

mic_interrupt
max_total_speakers
max_speakers
max_requests

mic_on (for all microphones on)
mic_request_on (for all microphones in request list)
mic_status_done

11.2.15 Help

help<CR>

help <command><CR>

Help is available for all commands supported by the CU. If a command is included after the help command, details on that command is issued by the CU.

The help command results in a brief description of the command being issued by the CU. This command is intended for use on a simple console.

11.2.16 **Commands from CU 5905 to External Control**

11.2.17 Microphone On

mic_on <seat no><CR>

A microphone is turned on.

11.2.18 Microphone Off

mic_off <seat no><CR>

A microphone is turned off.

11.2.19 Microphone into Request List

mic_request_on <seat no> <request position><CR>

A microphone is inserted into the request list.

<request position> provides information about the position in the request list.

11.2.20 Microphone out of Request List

mic_request_off <seat no><CR>

A microphone is removed from request list.

11.2.21 Max Total Speakers

max_total_speakers <max total speakers><CR>

Maximum number of speakers allowed to speak.

<max total speakers> "1" to "8"

11.2.22 Max Delegate Speakers

max_speakers <max speakers><CR>

Maximum number of delegates allowed to speak.

<max speakers> "1" to "8"

11.2.23 Max Requests

max_requests <max requests><CR>

Maximum number of delegates allowed in the request list.

<max requests> "0" to "250".

11.2.24 Operation Mode

mic_mode <mode><CR>

Provides system operation mode.

<mode> "auto" (Automatic), "fifo" (First-in-first-out), "manual" (Manual) or "vox" (Voice Active)

11.2.25 Interrupt Mode

mic_interrupt <mode><CR>

Ability for microphones to interrupt.

<mode> "on" (microphones interrupt) or "off" (microphones do not interrupt)

11.2.26 Seat State

seat_state <seat number> <seat state> <seat name><CR>

Provides seat information.

This information is sent from the CU to an External Control, when the External Control requests microphone status (**mic_status**).

<seat number> The seat number identification of a Discussion Unit. An number from 1 to 65535.

<seat state> The current state of the seat. This is either "active" or "passive"

<seat name> Name assigned to a Discussion Unit via the browser interface.

Example:

```
seat_state 12 active Sharon Hall
```

11.2.27 Microphone Status Complete

mic_status_done<CR>

Provides notification that complete system status has been sent.

11.2.28 Seat State

seat_state <seat number> <seat state><CR>

Provides seat state information.

This information is sent from the CU to an External Control, when the state of a seat changes – a seat becomes passive or active.

<seat number> The seat number identification of a discussion unit. An integer ranging from 1 to 65535.

< **seat state** > The current state of the seat. This can be "active" or "passive"

11.2.29 Command error

command_error <error text><CR>

The CU has received an unknown command.

<error text> is a text explaining the error.

Examples:

command_error unknown command<CR>

command_error syntax error<CR>

```
mic_mode auto
mic_interrupt off
max_total_speakers 4
max_speakers 3
max_requests 250
mic_status_done
```

This command informs about seat number 12, which is active and has the name Sharon Hall attached.

11.3 Audio Control

11.3.1 Commands from External Control to CU 5905

11.3.2 Set Loudspeaker Volume

loudspeaker_volume <volume><CR>

Sets the volume of the loudspeakers for all Discussion Units.

<volume> The volume of the loudspeakers ranges from -41 to 0. The value -41 indicates the speaker is Off. Values from -40 to 0 indicates the attenuation in dB.

The CU responds to this command by issuing the **loudspeaker_volume** command.

11.3.3 Set Line Input 1 Level

line_input_level_1 <level><CR>

Adjusts the level of the line input 1 signal.

<level> The level of line input 1 ranges from -41 to 0. The value -41 indicates the signal level is zero. Values from -40 to 0 indicate the attenuation in dB.

The CU responds to this command by issuing the **line_input_level_1** command.

11.3.4 Set Line Output Volume (A-D)

line_output_volume <output> <volume><CR>

Adjusts the level of the line output signal.

<output> Indicates which output is being controlled. Possible values are: 'A', 'B', 'C' or 'D'.

<volume> The volume of the line output ranges from -41 to 0. The value -41 indicates the volume is Off. Values from -40 to 0 indicate attenuation in dB.

The CU responds to this command by issuing the **line_output_volume** command.

11.3.5 Define Audio Path

audio_path <path> <on/off><CR>

This command defines audio connections in the system.

<path> Indicates which connection is being controlled. Possible values are: 'mic_to_speaker', 'mic_to_floor', 'linein_1_to_speaker', 'linein_1_to_lineout_A' or 'linein_1_to_floor'.

<on/off> Indicates whether the audio is being routed from microphones/lineinput_1 to speakers/lineoutput/floor.

The CU responds to this command by issuing the **audio_path** command.

11.3.6 Request Audio Status

audio_status<CR>

Provides system audio status.

The CU responds to this command by issuing a list of commands for the Audio settings:

loudspeaker_volume
line_output_volume (for all outputs A-D)
audio_path (for all paths)
line_input_level
audio_status_done

11.3.7 **Commands from CU 5905 to External Control**

11.3.8 Loudspeaker Volume

loudspeaker_volume <volume><CR>

Indicates the volume of loudspeakers for all Discussion Units.

<volume> The volume of the loudspeakers ranges from -41 to 0. The value -41 indicates the volume is Off. Values from -40 to 0 indicate attenuation in dB.

11.3.9 Line Input 1 Level

line_input_level_1 <level><CR>

Indicates the level of the line input 1 signal.

<level> The level of line input 1 ranges from -41 to 0. The value -41 indicates the level is zero. Values from -40 to 0 indicate attenuation in dB.

11.3.10 Line Output Level (A-D)

line_output_level <output> <level><CR>

Adjusts the level of the line output signal.

<output> Indicates which output is being controlled. Possible values are: 'A', 'B', 'C' or 'D'.

<level> The level of the line output ranges from -41 to 0. The value -41 indicates the output is zero. Values from -40 to 0 indicate attenuation in dB.

11.3.11 Define Audio Path

audio_path <path> <on/off><CR>

This command defines audio connections in the system.

<path> Indicates which connection is being controlled. Possible values are: 'mic_to_speaker', 'mic_to_floor', 'linein_1_to_speaker', 'linein_1_to_lineout_A' or 'linein_1_to_floor'.

<on/off> Indicates whether the audio is being routed from microphones/lineinput_1 to speakers/lineoutput_A/floor.

11.3.12 Audio Status Complete

audio_status_done<CR>

This command terminates audio status streaming.

12 Technical Specifications

12.1 System Specifications

12.1.1 Overall System Characteristics

The microphone system conforms to IEC 60914, the international standard for discussion systems. However the functionality of an Interpreter Unit differs from the standard.

Audio performance specifications are measured from the audio input of a Discussion Unit to the headphone output of a Discussion Unit.

System Audio Performance

Audio quality	24 bit audio @ 32 kHz sampling frequency
Audio frequency response	65 Hz - 16 kHz (-3 dB)
Total harmonic distortion at 1 kHz	< 0.1%
Dynamic range	> 80 dB
Weighted signal-to-noise ratio	> 85 dB(A)

Cabling and System Limits

Cable type (min. specification)	Cat5e, AWG 24, screened
Maximum cable length in one chain	120 m

System Environmental Conditions

Working condition	Fixed, stationary or transportable

Temperature Range

To guarantee specified performance	5 Deg C. to 40 Deg C.
Storage temperature	-20 Deg C. to 60 Deg C
Maximum relative humidity	< 80%

Approvals

EMC emission	According to harmonized standard EN 55103-1 and FCC rules part 15, complying with the limits for a class A digital devices
EMC immunity	According to harmonized standard EN 55103-2
EMC approvals	Affixed with the CE mark
ESD	According to harmonized standard EN 55103-2
Mains harmonics	According to harmonized standard EN 55103-1
Environmental requirements	Contains no banned substances as specified in UAT-0480/100 (e.g. no cadmium or asbestos)

Specifications are subject to change without notice

12.2 CU 5905 Specifications

Analog Section

Audio output signal type	electronically balanced
Nominal output level	0 dBm at nominal input
Max. output level	4.9V RMS ~ +16 dBm
Audio input signal type	electronically balanced
Nominal input level (In 1 is switchable)	0 dBm or -10 dBm (0.775V RMS or 0.245V RMS)
Max. input level	+15 dBm (4.5V RMS)
Analog Audio in	impedance 50-100 kΩ

Connectors

Chain – Discussion units (DCS-LAN)	2xRJ45

Maximum total number of units to be connected to both outputs on a CU 5905:

DC 5980P Discussion Units	up to 60 pieces
Audio output	4 units XLR3 male connectors
Audio input	2 units XLR3 female connector
LAN (TCP/IP)	1 RJ45
EEM	1 contact closure input

General

Power consumption	max. 150W/48V
Supply voltage for DC 5980 units	125W/48V
Weight	2.8 kg (6.17 lbs.)
Dimensions (W x H x D) (Dimension in bracket is including 19” brackets)	427 (483) x 44.4 x 186 mm (16.8 x 1.75 x 7.2 in.)

System Performance

Max. number of discussion units	250
Max. number of interpreter units	32
Max. number of languages	2
Max number of open microphones	8

Accessories Supplied

- CU 5900 External Power Supply incl. main cable
- Terminal block for EEM connector
- 19” brackets for installing in 19” standard racks
- USB memory stick with ‘User Manual’
- DC 5980P Button Overlays:

- Chairman, Pictogram, 2 pieces
- Interpreter, Pictogram, 3 pieces
- Delegate – Speak, Pictogram, 1 piece

- Tool for fixing the GM 59xx Gooseneck Microphone

CU 5900 External Power Supply

Delivered power	max. 150W
Input current	max. 4A@115V AC or max. 2A@230V AC
In-rush current	max. 40A@115V or max. 20A@230V
Standby consumption	<0.5W
Main voltage	100 - 240V, 50 - 60Hz
Supply voltage for CU 5905	48V/3A
Efficiency	typical 87%
Weight	935 g
Dimensions (W x H x D)	180 x 52 x 99 mm (7.09 x 2.05 x 3.9 in.)
Approvals	CE, KC, CCC, UL, TÜV

Specifications are subject to change without notice

12.3 DC 5980P Discussion Unit

Digital Section

Loudspeaker frequency range	150 Hz – 15 kHz
Loudspeaker maximum power	2.1W RMS

General

Power requirement	24-48 V DC
Power consumption (Power supplied from CU 5905 / EX 6010 / PS 6000)	1W to 3W
Weight	500 g (1.1 lbs.)
Dimensions (W x H x D)	128 x 71 x 146 mm (5.0 x 2.8 x 5.75 in.)
Color	Black

Connectors

DCS-LAN loop through	2 pieces RJ45
Headphone	3.5 mm Stereo Jack plug
XLR for GM 65xx or GM 59xx type	XLR3 female

Accessories supplied

- Button overlay, Pictogram, Delegate - Speak & Mute, 1 piece
- AC 5900 Cable Clamp, 1 piece

Specifications are subject to change without notice.

12.4 GM 59xx Gooseneck Microphones

General

Transducer type	Condenser
Polar pattern	Cardioid
Frequency response	30 Hz - 18 kHz
Sensitivity	-52 +/- 3dB (0dB = 1V/1Pa, 1 kHz)
Maximum input sound level	110 dB SPL, 1 kHz at 3% THD
Signal-to-noise ratio	>60 dBA
Front/back ratio	>25 dB (1 kHz)
Dimension (GM 5923)	400 mm (15.75 in.)
Dimension (GM 5924)	500 mm (19.7 in.)
Microphone connector	XLR3 male

Specifications are subject to change without notice.

12.5 Connection Details

Main Power

Blue	Neutral
Brown	Live
Green/Yellow	Earth (Ground)

Chain (DCS-LAN)

The DDS 5900 system uses Cat5e, Cat6 or Cat7 F/UTP or U/FTP cables with screened RJ45 connectors.

EIA 568-B wiring must be used.

Important: The names of Cat5/6/7 cable type have changed.

Old Name	New Name
FTP	F/UTP
STP	U/FTP
UTP	U/UTP

Important: Use only F/UTP or U/FTP (screened) cables and screened RJ45 connectors and not U/UTP cable, which is unscreened.

How to wire a Cat5e (EIA 568-B) cable to a RJ45 con.:

Pin	Function	Connector #1	Connector #2
1	In-going +	ORG/WHT	ORG/WHT
2	In-going -	ORG	ORG
3	+48V	GRN/WHT	GRN/WHT
4	0V	BLU	BLU
5	0V	BLU/WHT	BLU/WHT
6	+48V	GRN	GRN
7	Outgoing -	BRN/WHT	BRN/WHT
8	Outgoing +	BRN	BRN

If other color codes are used then the four pairs are connected as follows:

Pair 2: Pin 1 & 2
Pair 3: Pin 3 & 6
Pair 1: Pin 4 & 5
Pair 4: Pin 7 & 8

The phase of the pairs must be correct and the wiring spec. as stated in Cat5e (EIA 568-B) has to be followed.

Cat6 and Cat7 cables are normally only be terminated in sockets (female) and not in cable plugs.

Cat6 and Cat7 can only be used for feeding cables terminating in wall outlets or patch panels.

Analog Audio Out

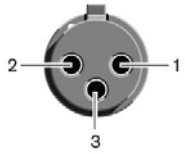
XLR3 male

Pin	Signal	Cable type
1	Earth	2 x 0.25 mm2 shielded.
2	Signal +	
3	Signal –	

Analog Audio In

XLR3 female

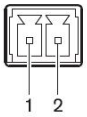
Pin	Signal	Cable type
1	Earth	2 x 0.25 mm2 shielded.
2	Signal +	
3	Signal –	



Emergency switch

Terminal block

Connect the emergency switch to pin 1 and 2.



Earphones

3.5 mm Jack plug

Pin	Connector	Function
1	Tip	Signal left
2	Ring	Signal Right
3	Sleeve	Electrical earth/screen

13 How To Order

13.1 DDS 5900

Central Unit for DDS5900 system. Includes built-in web browser	CU 5905
In-line power supply for PI 6000, CU 5905, CU 6105, and CU 6110	PS CU

Portable discussion unit for DDS 5900. Includes loudspeaker and channel selectors. Configurable as chairman, delegate, or interpreter.	DC 5980 P
Base unit for DC 5900 F Discussion unit.	DC 5900 F
Loudspeaker for use with DC 5900 F	LS 5900 F
XLR/Microflex Adapter (5 pack)	AC 5901 5PK

13.2 FP 5921 F

DC 5900 F front plate without channel selectors. Configurable as chairman or delegate	FP 5921 F
DC 5900 F Overlay: Delegate with mute button (5 pack)	FP 5921 OL1 5PK

DC 5900 F Overlay: Delegate (5 pack)	FP 5921 OL2 5PK
DC 5900 F Overlay: Chairman with all-delegate off button (2 pack; Included with CU 5905)	FP 5921 OL3 2PK
DC 5900 F Overlay: no buttons (5 pack; Chairman & Delegate)	FP 5921 OL4 5PK

13.3 FP 5981 F

DC 5900 F front plate with channel selectors. Configurable as chairman or delegate	FP 5981 F
DC 5900 F Overlay: Delegate with mute and channel selector buttons (5 pack)	FP 5981 OL5 5PK

DC 5900 F Overlay: Delegate with channel selector buttons (5 pack)	FP 5981 OL6 5PK
DC 5900 F Overlay: Chairman with all delegate-off button and channel selector buttons (2 pack; Included with CU 5905)	FP 5981 OL7 2PK

13.4 Microphones

Gooseneck microphone, 40 cm. Black with LED.	GM 5923
Gooseneck microphone, 50 cm. Black with LED.	GM 5924
Gooseneck microphone, 40 cm. Black with LED. Pack of 5 units.	GM 6523
Gooseneck microphone, 50 cm. Black with LED. Pack of 5 units.	GM 6524
Gooseneck microphone, 63 cm. Black with LED. Pack of 5 units.	GM 6525

Windscreen for GM 65xx gooseneck microphones. Pack of 4 pieces	GM 65XX WS 4PK
Windscreen for GM 65xx gooseneck microphones. Pack of 20 pieces	GM 65xx WS
Shotgun microphone with gooseneck	GM 6628
Boundary Mic for use with FD/FC or DM/CM6xxxF	BM 6620

13.5 **Cables**

0.5m STP Cat5e (RJ45) cable	EC 6001-0.5
1m STP Cat5e (RJ45) cable	EC 6001-01
2m STP Cat5e (RJ45) cable	EC 6001-02
3m STP Cat5e (RJ45) cable	EC 6001-03

5m STP Cat5e (RJ45) cable	EC 6001-05
10m STP Cat5e (RJ45) cable	EC 6001-10
20m STP Cat5e (RJ45) cable	EC 6001-20
30m STP Cat5e (RJ45) cable	EC 6001-30
50m STP Cat5e (RJ45) cable	EC 6001-50

13.6 **Advanced Setup**

Distribution box with 4 outputs. DCS 6000 and DDS 5900 systems	JB 6104

DCS-LAN extension unit for additional 160 conference units	EX 6010
DCS-LAN Power Kit	PS 6001

13.7 **Storage**

Storage box: 10 units of DC 5980 P and GM 59XX	SB 5980

Plastic box for one 19 unit (CU 4010; CU 6005/11; EX 6010; AO 6008 or DT 6008/32)	SB CU

13.8 **Spare Parts**

Spare Part Set DDS 5900 F	SPS DDS 5900 F
Spare Part Set DDS 5900 P	SPS DDS 5900 P
Spare Part Set DDS 5900 P	SPS DDS 5900 P
AC 5900 Cable Clamps; pack of 20 units	AC 5900 CC 20PK
Button overlay for DC 5980 P: Delegate, with mic on/off; pack of 10 units	DC 5980 P ACC-DM

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